

Cold Chain and Logistics Taskforce Workshop New-York, 2-4 November 2009

“The problems that we face cannot be solved by the same level of thinking that created them.”

Albert Einstein

“In theory, there is no difference between theory and practice. In practice, there is.”

Yogi Berra

Summary

National Immunization Programmes have an ongoing need for cold chain and logistics (CCL) systems. The status of CCL systems is a key constraint for new vaccine introduction, which demands both expansion and improved performance. Other challenges and opportunities include integration with other programmes and collaboration with the private sector.

The CCL Taskforce, convened by UNICEF to coordinate the work of partners supporting national capacity development in CCL systems, held a workshop to reach a consensus on the approach and key actions needed to address CCL needs over the next year or so. The workshop developed an ambitious work agenda and established subgroups on:

(1) **Guidance:** Review of existing guidance, tools, and resources with the aim of mapping out needs, including synthesis of current guidance.

Lead: Bertrand Jacquet, UNICEF SD

(2) **Monitoring:** Develop guidance on assessing ‘CCL system-readiness’ for new vaccine introduction, equipment inventories, and indicators to monitor performance. A specific need is to provide GAVI with guidance on assessing CCL readiness for new vaccines. Immediate focus will be a review of data from selected countries.

Lead: Solo Kone/Rudi Eggers, WHO

(3) **Advocacy:** To increase priority and resources for CCL systems within each agency, and with donors and developing country governments. Immediate action will be to make sure that the case for CCL is embedded within overall advocacy for immunization and strengthening health systems.

Leads: Annika Salovaara, UNICEF SD; Jonathan Cauldwell, UNICEF PARMO

(4) **Integration:** Tasked with identifying the boundaries and overlaps between EPI and other programmes for integrated supply management, including working with the private sector. The immediate task is to clearly define a work programme.

Lead: Ahmet Afsar, UNICEF PD

A cross-cutting theme and urgent need is training and human capacity building, internationally and in individual countries. As an initial step, partners will share information on consultants and training opportunities.

Taskforce members will be in phone contact monthly to support and follow-up on the work of the subgroups, as well as to provide agency updates.

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Introduction and Objectives

UNICEF hosted a workshop for the Cold Chain and Logistics (CCL) Taskforce in New York, 2-4 November 2009, with the goal of reaching consensus on the approach and key actions needed for CCL system strengthening and expansion at the country level to improve performance and enable new vaccine introduction. Participants were asked to identify the main challenges and issues of concern and to generate solutions to define the joint work on CCL for the next year or two. The eventual aim is to build on the recommendations of the June 2009 NUVI workshop (see Annex I) by developing broadly agreed CCL guidelines.

CCL Taskforce partners need to work together in support of national CCL systems capable of achieving the ‘six rights’ defined in the ‘Optimize’ vision statement: *right amount of right commodity to the right place at the right time at the right quality for the right cost.* (see Annex 3 for more on the Optimize vision statement). The CCL system for EPI vaccines also needs to look at issues of integration with the delivery of other health commodities.

Following discussion of its relationship to the Optimize vision, Workshop members adopted the vision, goals and outcomes articulated at the first CCL Taskforce meeting, held in November 2007. (See: http://www.unicef.org/immunization/files/CCL_Mtg_1Nov07_report.pdf). It was agreed that there is a need to improve collaboration and achieve measurable results. This will include developing and monitoring performance indicators with outcomes linked to SMART (Specific, Measurable, Achievable, Realistic, Timebound) objectives, with feasible requirements for data collection.

Background

The Millennium Development Goals demand strategies to address the two leading child killers: pneumonia and diarrhoea. Vaccines are now available against the leading causes of pneumonia and diarrhoea – respectively: pneumococcal conjugate vaccine (PCV) and rotavirus vaccine (RV) – but their introduction requires an integrated strategy, as the new vaccines will not prevent all cases. The introduction of other new vaccines is also being planned.

Support for CCL systems is vital to enable immunization to reach every community. The new vaccines require additional storage/transport capacity, and their relatively high cost demands efforts to reduce wastage. But a far higher cost is that of lives lost by failure to deliver appropriate vaccines, on-time and without damage from heat or freezing.¹

Already 13 countries have been approved for GAVI support to introduce PCV, and an additional 14 applied in the September 2009 round. Ten countries also applied for RV in the September round, the first time that countries outside Europe and the Americas could do so. Plans to introduce both vaccines in the near future are one priority criterion for support by CCL Taskforce Partners. (See Annex 2.)

The traditional EPI schedule² requires a total of about 40cm³ per fully immunized child. The addition of DTPHepBHib vaccine in previously available formats (1- and 2-dose vials), increased storage requirement to about 60cm³ per fully immunized child. A World Health Organization (WHO) presentation at the Global Immunization Meeting (GIM) in 2008 suggested a storage need of at least 300cm³ per child to accommodate PCV and RV. With more compact presentations of both PCV and RV now available, a target of around 150cm³ per child was presented at the 2009 GIM. Further work is needed to help define that target, bearing in mind the need for other commodities (e.g., oxytocin, rapid diagnostic tests) that also require a cold chain space, as well as campaigns and other vaccines that may be added. In addition to a cold chain, adequate dry storage is also needed for the bundled safe injection supplies and, for some vaccines, the diluents.

The planned deployment of pandemic vaccine and other campaigns may offer opportunities for CCL system strengthening; for example to distribute and train people on new temperature monitoring devices, such as the Fridge-Tag™, which keeps a 30-day record and has heat and freeze alarm settings for vaccines. UNICEF is currently evaluating these, as well as a solar-powered refrigerator, SolarChill, as part of a review of a Japan-supported grant to strengthen CCL systems. One key lesson that has already been documented from this work is the failure to deploy and/or install equipment that is supplied. *Improved management is vital to address these and other aspects of CCL system strengthening.*

UNICEF first convened the CCL Taskforce in 2007 to work collaboratively with partners on CCL system strengthening. The workshop sought to develop a work-plan to address the key

¹ The vaccine vial monitor (VVM) shows when to discard a vaccine because of cumulative heat exposure; but there is no indicator for freezing. Therefore, preventing freeze-damage is now as important as keeping vaccines cool.

² BCG at birth, three doses of DTP and OPV, one dose of measles as well as up to two doses of tetanus toxoid (TT) given through the mother antenatally

issues related to support for CCL systems, to enable new vaccine introduction in a cooperative and coordinated way. The present workshop shares these goals.

Workshop Proceedings

The agenda was structured to cover:

- Agreement on the CCL vision, goals, outcomes; partner contributions within the scope of their work on CCL-related issues (see Annex 3); and country prioritisation by each agency and for the CCL Taskforce (see Annex 2)
- Specific sessions on: (1) the potential of the new Effective Vaccine Management (EVM) tool to assess CCL system readiness for new vaccines; (2) the potential of new technologies, such as rapidSMS, for vaccine and equipment management; and (3) CCL-related data that partners could share, subject to national sensitivities and the risks of data distortion. Summaries and action points from these sessions are presented below.
- Participant-defined priority questions and issues, which were initially addressed in four small groups looking at: integration; policy and advocacy; forecasting, planning and information systems; and in-country logistics and capacity (see Annex 4). The actions recommended were synthesized in plenary and allocated to subgroups.

EVM as the key assessment tool

VMA (2001) + EVSM (2004) = EVM (2009)

Effective vaccine management (EVM) is a quality management tool; questionnaire-based; supported by linked guidance notes and guidance documents; supplemented by model Standard Operating Procedures, facts and evidence. The two main uses of EVM are:

1. Assessment of supply chain quality, based on a systematically selected sample of facilities
2. Identification of problems and monitoring of improvements in individual facilities.

Discussions on EVM as a tool to assess CCL systems will require further consideration and finalisation of the EVM.

Action points:

(1) CCL Taskforce to evaluate role of EVM for assessing CCL-system readiness for new vaccine introduction, as part of EVM roll-out planned for 2010.

Lead: Monitoring Subgroup

(2) Potential for using training workshop on EVM planned for Q2 2010 as a way to identify and develop consultants to assess and support CCL system readiness for new vaccine introduction. **Lead:** Oz/UNICEF PD

RapidSMS and other technology options

RapidSMS uses open source software and cell phone messaging to manage information, and has been used successfully in several contexts. Formatted SMS messages are sent to a central server and processed. This triggers appropriate workflow and response; data are visible on an online dashboard and exportable reports.

- Builds on existing practices with an appropriate technology
- Works with simplest of cell phones
- Low ongoing cost

Action point: The potential value of new technology approaches to improve equipment and vaccine stock management to be explored by the CCL Taskforce.

Lead: Oz/UNICEF PD

CCL system monitoring and data sharing

Data that could be used to monitor national CCL system performance are kept by each agency; the potential data that could be shared between agencies was presented by UNICEF and WHO:

UNICEF Supply Division data

- Forecast data – vaccines, devices, cold chain
- Forecast feedback to countries
- Procurement data
- Vaccine arrival reports
- Stock-out data

WHO CCL data and resources

- TechNet 21
- Technologies and Logistics Advisory Committee
- Mapping of vaccine management software tools
- Stock monitoring in selected countries
- EVSM and EVM
- Joint Reporting Form (JRF) data: already on web site

Action point: The potential value of sharing a subset of the above data with CCL partners to be explored for a limited set of countries.

Lead: WHO & UNICEF SD

CCL Taskforce Subgroups

The workshop identified a variety of actions to address the main challenges. These were then regrouped into related actions, and it emerged that the best way to address the issues would be to establish subgroups on: (1) Guidance, (2) Monitoring, (3) Advocacy, and (4) Integration. It was agreed that the subgroups would report on progress during the next monthly inter-agency call to further define subgroup membership (initial list and lead proposed below); work plans; and the extent of support and time required to enable the groups to complete the different components of their work plan.

Guidance Subgroup: Interagency guidelines

[\(Bertrand Jacquet \[lead\], Solo Kone, Ousmane Dia, Philippe Jaillard, James Cheyne Philip Van De Graaf\)](#)

Cold chain and logistics systems strengthening needs to have clearly defined boundaries aligned with the agreements of the CCL Taskforce. For example, regulatory issues, choice of product, and waste disposal are all linked to CCL, but not part of the initial focus of the CCL Taskforce, which focuses on vaccine shipping, reception, storage, transport and management, together with bundled safe injections supplies.

At present, there is no overarching CCL systems strengthening guidance, but many related tools and publications are available. An initial mapping of resources was shared with participants. For some issues, a synthesis of available guidance, resolving any conflicting information, will be needed. In other cases, little additional guidance will be needed. Finally, some existing guidance may need to be updated, and new guidance may need to be developed. Much new guidance is already included in the updated GTN vaccine management training guide. The first step is thus to collect and review available guidance to identify overlaps, conflicts and areas where new guidance is needed or current guidance requires updates based on new developments. The subgroup will then: (1) identify key documents required to facilitate the operational work of those in charge of CCL areas at country level, and (2) design an efficient platform for dissemination.

Action point: All to send relevant resources, publications and tools to jacimovic@unicef.org

The form of guidance also needs careful thought, with a focus on what will be most useful for the different users. The main target audience for this guidance would be national EPI and stakeholders; but there would also need to be some specific guidance for sub-national managers whose key need may be management skills rather than technical knowledge. The potential to use “YouTube” and other innovative approaches to providing guidance needs exploration.

The most important tool to support national capacity development will be skilled people who can teach how to make best use of the tools and so on. This is covered separately below

The Workshop identified some of the key elements (non-exhaustive list) that need to be addressed by the Guidance Subgroup:

- Guidance on equipment inventory; calculation of storage volume for current, future, and emergency needs and budgeting equipment; population and coverage target calculations; time horizon for calculations
- How to ensure that vaccine orders are always placed with current stock levels stated (ideally physical count) at every level in the system, as part of a more actively managed inventory system, as befits a highly valued commodity in limited supply.
- "Immediate reaction" indicators need to be defined;³ as does how to ensure that individuals at the appropriate level have the responsibility to, and actually do, react.
- Ensuring adequate definition and costing of CCL needs within EPI planning (cMYP) including all information for upgrading the cold chain for new vaccine introduction, and integrating this planning into the wider health sector plan. (A good tool is already available for cMYP costing)
- Support to MoH by in-country partners, both in forecasting and in informing subsequent orders
- How to integrate CCL supervision into other supportive supervisory activities
- Specific procedures, such as customs clearance, and financial processes for UNICEF procurement
- Explore the set up of an effective platform (web and CDrom) for easy access to tools, guidelines and training materials and latest information, potentially using TechNet and other existing platforms.

³ Indicators and definitions on stock levels, alerts and responses - including on #/% of vials with VVM past discard point, broken fridges, etc.

Monitoring Subgroup: Assessment, inventory and indicators

(Solo Kone/Rudi Eggers [lead], Carla Lee, Michel Othepe, Bertrand Jacquet, Rob Matthews, Oya Afsar, Paulo Froes, Olivier Ronveaux)

A range of inter-related activities was allocated to this subgroup, covering three broad areas: (1) criteria to assess ‘CCL system-readiness’ for new vaccine introduction; (2) minimum processes and data for the cold chain equipment inventory, as part of that assessment; and (3) developing and monitoring indicators of national CCL system performance, including an assessment of the impact of the CCL Taskforce. Proposed activities for the subgroup include:

- Develop a consensus on assessment processes/outcomes for evaluating CCL system readiness for new vaccine introduction, including establishment of a check-list of the minimum outcomes that must be achieved before new vaccine introduction can proceed
- Based on the above, develop guidance for the GAVI Independent Review Committee on assessing CCL systems as part of the GAVI application process; potentially to also propose policy to GAVI’s Policy and Practice Committee on the issues
- Develop guidance on equipment inventory that is dynamic, updated and linked to equipment maintenance/repair and a rehabilitation action plan. Guidance should address: (1) tools for managing inventories; (2) processes for collecting and updating data on equipment and its status; (3) options for decentralization of inventory; and (4) sharing lessons and country experiences.
- Develop indicators and monitoring systems on transport, maintenance and dry storage, and synthesise other potential indicators to define the minimum data set for monitoring national CCL performance, building on the data set begun in 2007 by the original CCL Taskforce
- Review the CCL indicators collected in the JRF, and recommend any needed changes by Q3 2010, when the JRF content will be reviewed; consider a process for review and feedback of CCL data in the JRF to improve its quality.

Advocacy Subgroup: Developing the argument

Annika Salovaara [lead, technical], Simona Zipursky, Paulo Froes, Robert Steinglass, Jonathan Caldwell [lead, advocacy] + advocacy focal points from each agency, as appropriate

Governments need to place increased priority on CCL systems, especially given the increased cost of new vaccines. The concept of ‘protecting the investment’ in vaccines goes beyond governments to donors and agencies supporting national immunization programmes. Each of these audiences needs to understand the need for greater investment, both human and financial, in CCL systems. Advocacy must be based on data showing the value of these investments from all perspectives.

It was agreed that advocacy for CCL system strengthening should be carried out in the context of overall advocacy for immunization (especially for reaching the unreached), and that CCL should be seen as a critical component of health systems, and thus linked to the agenda of health system strengthening (HSS).

The advocacy subgroup will need inputs from those working on advocacy in each agency to strengthen the argument for investment in CCL. The first step will be to identify relevant advocacy and/or external communication staff who can guide the technical work and formulate relevant, compelling messages.

Advocacy is needed within each of the partner agencies to urge the dedication of more human and financial resources for national capacity building, as well as urgent gap-filling. In addition to donor advocacy, a case must also be made to governments for greater investment, especially for operational and replacement costs.

Action Point: Each agency to identify appropriate focal points and advise on their participation. (Jonathan Cauldwell will be the advocacy focal point for UNICEF)

Potential activities of the Advocacy Subgroup:

- Undertake accurate costing exercise to (1) enable subsequent resource mobilization and (2) portray the costs of *failing to act* to protect the investment in new vaccines, as well as to develop the case for investment by donors and governments, detailing the human and financial resources needed and their capital and running costs
- Advocacy on the need for and value of investing in CCL as part of health system strengthening; develop inputs for including CCL in country HSS coordination mechanisms
- Advocacy by partner agencies with governments to secure adequate budgets, focusing on vaccine security. Raise the level of interaction (e.g. Director of planning), to make the argument for protecting the investment made in new vaccines
- Communication to UNICEF, WHO and partners' representatives on the need to include CCL in health sector annual review meetings and health budgeting; and to advocate for CCL system strengthening, including new equipment, capacity building, customs clearance and maintenance
- Identify and develop champions in ministries of health and beyond for advocacy purpose
- Develop multiple partnerships and endorsed global advocacy process, including messages and multi-partner statements, to promote new vaccine funding to be tied or "bundled" to costed CCL capacity.
- Advocacy for investing in human resources and capacity building at the country level, especially for technical positions and logistics (managerial) functions.

Integration Subgroup: Building linkages & developing options

Ahmet Afsar [lead], Tom O'Connell, Ousmane Dia, Bertrand Jacquet, Modibo Dicko

Integrating EPI logistics and supplies within the larger scope of health services is a recurrent discussion within governments and partner agencies. The notion that supply chain can include commodities other than vaccines is often brought to the discussion, and already practiced in some countries. While this notion offers important potential efficiency gains, as well as the potential to extend the reach of vaccine distribution, there are nonetheless several practical, political and other constraints that need to be addressed. Furthermore, the responsibility for integration cannot rest solely with EPI. The following ideas suggest ways to explore future possibilities.

- Develop guidance on how EPI can address integration without compromising performance
- Agree on a few countries where partner/donor reviews present opportunities for more efficient ways of working towards fewer vertical activities and greater integration
- Develop guidance on private sector engagement, taking into consideration different country typologies; explore potential for outsourcing
- Develop options for outsourcing or decentralization where adequate management capacity exists,

- Review country experiences in integrated supplies and share lessons learned, including operational research on CCL funded by GAVI.

There is also a need to integrate EPI CCL into general health sector plans and the new tools that are being developed to prioritise investments. Some of this work may link to the case for investment in CCL, and will include:

- Integrate CCL costs into Marginal Budgeting for Bottlenecks (MBB) and similar tools to provide robust evidence that supports investment on CCL
- Ensure that health ministries make fiscally sound arguments to finance ministries for increased CCL funding to protect new vaccine investments
- Ensure that cMYP, MBB, and Medium-Term Expenditure Frameworks accurately reflect the resources needed for successful CCL.

Human resources and capacity building

Human resources and capacity building are essential components of success in building and maintaining efficient cold chain and logistics.. Among the key actions required are:

- Improve staff availability and capacity at the country and agency levels
- Cultivate Junior Professional Officers and a systematic approach to building up the next generation of experts (coaching)
- Build in-country capacity, training and supportive supervision.

No sub-group was established at the CCL Workshop, but may be needed in the future. For the moment, partners can share information on activities and aim to build synergies, such as the EVM training mentioned above.

Action point: ALL to share actual and potential CCL consultants and information on planned trainings to jacimovic@unicef.org

Taskforce coordination

Considering the Taskforce's objectives and terms of reference, as well as the pressing urgency to provide support to countries introducing new vaccines, the group agreed to adjust its mode of functioning, setting up working groups and holding consultations on a more regular basis.

The Taskforce agreed to:

1. [Teleconference](#)
 - a. [Teleconference on the 1st Tuesday of the month, at 10am New York time](#)
 - b. [Send a brief email update on the previous Friday, detailing new work and plans by each agency and subgroup](#)
 - c. [Hold the next teleconference on the 1st December 2009](#)
2. [Review the results of this system after 3 months.](#)

Annex 1: CCL workshop, NUVI meeting, June 2009

Workgroup 5 of NUVI meeting, 16-18 June 200, Montreux Cold chain and logistics systems for preparedness for the introduction of PCV, Rotavirus, HPV and other new vaccines

Background

Logistics needs are more than just cold chain capacity - they encompass human resources, ongoing operational costs, transportation and distribution, maintenance guidelines, dry storage needs, and many other aspects. Storage and distribution of pentavalent, pneumococcal and rotavirus vaccines are big challenges which need careful consideration.

UNICEF estimates that the additional costs for expanding cold chain will be between \$1 and \$20 for an extra 100 cm³ storage per child in the birth cohort, depending on the type of equipment needed. The UNICEF estimate for upgrading at national level has a range whose midpoint is close to the WHO estimate of just under \$1 per child to accommodate the additional volume.

These challenges are being largely addressed with ongoing efforts to adapt products and technologies to developing country situations and through the provision of tools that will assist in the management and planning for effective distribution of these vaccines. Building the capacity of logisticians and health care staff must also be emphasized.

Main Topics of Discussion

- Cold chain capacity requirements for new vaccines introduction are significantly greater than countries are used to.
- Cold chain and storage capacities at national/sub-national and district/service delivery level vary widely, and need to be accurately estimated
- Tools exist that enable the space required to be plotted against the space available and an accurate estimate of shortfalls to be generated

Recommendations

Five immediate priority action items were agreed upon:

- Develop guidelines to help countries strengthen CCL systems
- Establish a cadre of consultants qualified to provide technical assistance to countries as required
- Implement the Effective Vaccine Management (EVM) Tool to identify needs and demonstrate CCL readiness to add new vaccines
- Ensure appropriate equipment and technologies are available and used
- Identify funding and mobilize resources needed for CCL

Participants also identified areas of work that are essential to start now, but are more comprehensive in nature and will take longer to complete. The top four long-term action items are:

- Strengthen human resource capacity: value and professionalize the logistics role by national governments
- Explore innovative options for supply chain efficiency gains from integration and using best practices from other sectors
- Establish ongoing monitoring and evaluation of national CCL performance
- Modelling of future scenarios to address uncertain future needs

Annex 2: Country priority by agency

The table below lists the countries that agencies are working with among the 30 countries that had applied for PCV support, 13 of which are already approved. Of these 30 countries, 23 are planning PCV introduction in 2010 and 12 also plan to introduce RV by 2011. This list provides an indication of prioritised need; including the GAVI Secretariat prioritization of countries that need support for introduction of these vaccines.

Some countries have already introduced the vaccines, and are not included in the prioritization. That leaves only three countries that meet all four priority criteria: Congo, Central African Republic and Yemen.

Countries applied or approved for PCV	Approved PCV	RV Intro by 2010	RV Intro by 2011	GAVI priority	UNICEF region	WHO region	UNICEF	WHO	PATH	Optimize	CDC	JSI (MCHIP)	AMP
Burundi		Y	Y	Y	ESARO	AFRO (ES)							
Ethiopia		Y		Y	ESARO	AFRO (ES)	Y		Y				
Kenya	Y	Y		Y	ESARO	AFRO (ES)	Y	Y	Y*			Y	
Madagascar				Y	ESARO	AFRO (ES)		Y					
Malawi		Y		Y	ESARO	AFRO (ES)	Y	Y					
Rwanda	Y	I			ESARO	AFRO (ES)		Y					
Tanzania		Y			ESARO	AFRO (ES)		Y	Y				
Uganda		Y			ESARO	AFRO (ES)	Y	Y	Y				
Zambia		Y			ESARO	AFRO (ES)		Y	Y				
Djibouti		Y			MENA	EMRO	Y				Y		
Sudan N		Y		Y	MENA	EMRO	Y	Y					
Yemen	Y	Y	Y	Y	MENA	EMRO	Y	Y					
Bolivia		Y	I	Y	TACRO	PAHO		Y					
Guyana	Y	Y	I	Y	TACRO	PAHO					Y		
Honduras	Y	Y	I	Y	TACRO	PAHO							
Nicaragua	Y	Y	I	Y	TACRO	PAHO			Y	Y			
Benin		Y		Y	WCARO	AFRO (W)		Y					Y
Cameroon	Y	Y		Y	WCARO	AFRO (C)		Y			Y		Y
Cent. Afr. Rep.	Y	Y	Y	Y	WCARO	AFRO (C)					Y		Y
Congo	Y	Y	Y	Y	WCARO	AFRO (C)	Y	Y					
Congo DR	Y			Y	WCARO	AFRO (C)	Y	Y				Y	
Côte d'Ivoire			Y		WCARO	AFRO (W)			Y				Y
Gambia	Y	I	Y		WCARO	AFRO (W)		Y					
Ghana			Y		WCARO	AFRO (W)	Y	Y	Y				
Guinea		Y	Y		WCARO	AFRO (W)							
Mali	Y	Y		Y	WCARO	AFRO (W)	Y	Y					Y
Nigeria					WCARO	AFRO (W)		Y			Y		
Senegal					WCARO	AFRO (W)		Y	Y				Y
Sierra Leone	Y			Y	WCARO	AFRO (W)		Y					
Togo		Y			WCARO	AFRO (W)							Y

I = introduced already

* countries where the agency is only working in part of the country

The table below shows priority countries for CCL support that have not yet applied for PCV.

Countries not yet applied PCV	GAVI	UNICEF region	WHO region	UNICEF	WHO	PATH	Optimize	CDC	JSI (MCHIP)	AMP
Albania		CEE/CIS	EURO				Y			
Georgia		CEE/CIS	EURO	Y						
Kyrgyzstan		CEE/CIS	EURO	Y						
Uzbekistan		CEE/CIS	EURO		Y					
Cambodia		EAPRO	WPRO	Y		Y				
China		EAPRO	WPRO			Y				
Indonesia		EAPRO	SEARO	Y	Y					
Kiribati		EAPRO	WPRO	Y						
Philippines		EAPRO	WPRO	Y						
Solomon Is.		EAPRO	WPRO	Y						
Thailand		EAPRO	SEARO			Y	Y			
Viet Nam		EAPRO	WPRO		Y	Y	Y			
Mozambique	Y	ESARO	AFRO (ES)							
Zimbabwe		ESARO	AFRO (ES)	Y						
South Africa		ESARO	AFRO (ES)			Y*				
Tunisia		MENA	EMRO				Y			
Bangladesh		ROSA	SEARO	Y						
India		ROSA	SEARO	Y	Y	Y*			Y	
Nepal		ROSA	SEARO	Y						
Pakistan	Y	ROSA	EMRO		Y					
Afghanistan		ROSA	ROSA		Y					
Peru		TACRO	PAHO			Y				
Burkina Faso		WCARO	AFRO (W)		Y					Y
Sao Tome & Principe		WCARO	AFRO (C)		Y					

*= part of country

Annex 3: Partner contribution to CCL goals

Agence de Médecine Préventive

The French Agency for Preventive Medicine (AMP) was established in 1972 to disseminate the latest scientific findings and technologies for the control of infectious disease. AMP's activities on immunization programmatic and logistics issues are focused on operational research, capacity building and networking development. Through the [EPIVAC](#) training program, AMP contributes to strengthening district officer's skills in material, financial and human resources management for CCL. AMP works in:

- Field-based research (bio-epidemiological, logistics and economic studies, clinical trials)
- Applied vaccinology (technical assistance, immunization logistics and safety, program review and evaluation)
- Human resources for health development and education
- International health expertise (collaboration with governments and agencies)
- Scientific and technical communication (seminars, publications, multimedia tools and resources)

The [SIVAC](#) program, a BMGF grant aiming to support national independent immunization and vaccine advisory committees, targets capacity building activities on CCL at senior professionals at the central level. AMP provides training through innovative approaches: face-to-face courses, distance learning courses, on-site training and documentation centres and training platforms.

In addition to logistics and economic studies conducted in countries, AMP supports operational research activities at the district level for strengthening immunization programs. These studies conducted by EPIVAC students have focused on CCL and other EPI issues that need to be addressed at the district level. The development of the international [EPIVAC network](#) in West and Central Africa represents an opportunity to gather information on CCL from districts, conduct operational research from the central to the service- delivery level, and conduct advocacy and training activities.

The Bill & Melinda Gates Foundation

In recognition of the need to develop new systems and technologies to address the growing challenges faced by vaccine delivery systems, the Bill & Melinda Gates Foundation funded 'Optimize,' a five-year, \$34 million collaboration between WHO and the Program of Appropriate Technology in Health (PATH) in 2007.

Other foundation activities indirectly support CCL – for example, work to stabilize vaccines in development, and work on Target Product Profiles with partners to ensure that products supported meet developing country systems needs.

Centers for Disease Control and Prevention

The Global Immunization Division (GID) of the Centers for Disease Control (CDC) is not as heavily involved in CCL as other partners. However, CDC is interested in being kept abreast of what is happening in relation to EPI and new vaccine introduction, and through this process may define a plan for collaboration or support for cold chain and logistics and the CCL Taskforce.

GAVI Alliance

The GAVI Alliance has as its central aim to support expanded immunization. It operates as follows:

- Countries provide information on anticipated stocks, nine months ahead of time
- GAVI approves defined volumes of vaccine doses, including buffer in first year
- Approvals are based on the country's stated targets and anticipated stocks
- Actual timing of shipment of vaccines by UNICEF may differ from planned shipments

In the future, GAVI plans include:

- EVM assessment mandatory to GAVI application process, with sub-national details wherever necessary
- Changes in application timing (for example, 9-to-24 months prior to planned introduction)

- Validation of CCL expansion plans (through, for example, rigorous pre-assessment)

John Snow, Inc: Maternal & Child Health Integrated Program

The USAID-funded, John Snow, Inc (JSI) -managed IMMUNIZATIONbasics (IMMbasics) recently came to an end, and transitioned into the Maternal & Child Health Integrated Program (MCHIP). JSI continues to be active in several countries in Africa and Asia, supporting CCL system strengthening and leading the immunization component at MCHIP.

MCHIP will continue to provide country-level support to India and DR Congo. Kenya has become a priority country for MCHIP also. A few JSI bilateral projects, funded by USAID in Nigeria and elsewhere, will be engaged in immunization, including in CCL. IMMbasics provided support in 2009 to the MOH in South Sudan, including in CCL. During 2008 and 2009, IMMbasics was the principle technical supporter to the MOH in Rwanda for the introduction of the new PCV-7 vaccine against pneumococcal disease. Since 2004, IMMbasics also worked on CCL -- including the development of learning materials and tools and supervision -- in Timor-Leste, Madagascar, India, Nigeria, DR Congo and Rwanda.

JSI has been, and continues to be, active in several global advisory bodies related to CCL:

- The WHO Technologies and Logistics Advisory Committee (TLAC), involved with the revision of the WHO Multi-dose Vial Policy (MDVP) and the search for visual cues on multi-dose vials to alert health workers when vials must be discarded.
- The Vaccines Presentation and Packaging Advisory Group (VPPAG), which provides input to and receives input from industry on the most appropriate presentation and packaging of vaccines for use in public sector programs in developing countries.
- The Program Advisory Group (PAG) of the WHO/PATH Optimize Project.

JSI staff provided considerable input into the WHO tool for post-introduction evaluation (PIE) of new vaccines.

In addition, JSI has two related projects: DELIVER and Making Medical Injections Safer (MMIS). For the last 5 years MMIS has been an active member of SIGN and supported the development of the revised Tool C and contributed to the development of new PEPFAR indicators on injection safety. The training manual on injection safety and HCWM was developed in collaboration with WHO is a reference document that was adapted in many countries. JSI also worked with the HCWM Alliance to develop the WHO core principles for achieving safe and sustainable management of healthcare waste. Since 2008, MMIS established a Healthcare Waste Management Technical Working Group with participants from PATH, WHO and other organizations. JSI conducted an evaluation of GAVI's Injection Safety Support to 58 countries, and is currently conducting the IS and HCWM assessment for PCV7 introduction in Gambia and Rwanda. JSI also continues to implement the MMIS project in 11 Countries, four with USAID funding (Nigeria, Uganda, Ethiopia and Mozambique) and seven with CDC funding (Cote d'Ivoire, Haiti, Rwanda, Kenya, Tanzania, South Africa and Botswana).

The DELIVER project strengthens supply systems for essential health commodities and works to ensure their sustainability. The "Storage Pocket Guide," is extensively distributed in language-appropriate versions in dozens of countries. In coming months, DELIVER will be engaged with WHO in all logistics aspects related to H1N1 vaccination in developing countries, including procurement of syringes and safety boxes and operational support at country level. The Supply Chain Management Systems project is the largest of the PEPFAR efforts and provides global procurement and distribution for essential HIV & AIDS medicines and supplies. The DELIVER project is also becoming more engaged in logistics related to immunization, and will participate in November in a CCL panel at the GAVI Partners Forum in Hanoi.

Project Optimize (PATH/WHO)

Project Optimize is a five-year collaboration, beginning in 2007, between WHO and PATH that aims to shape the future of immunization and health delivery systems, learning from today's problems and working with partners to develop innovative, evidence-based solutions. Over the next few years, Optimize will put technological and scientific advances to work, helping define the ideal characteristics and specifications for health products; and working to develop a vaccine supply chain that is flexible and robust enough to handle an increasingly large and costly portfolio of vaccines, many aimed at new target populations. To achieve these objectives, Optimize will focus its efforts on three strategic streams of work:

- **Innovation** (define ideal product attributes, increase dialogue with industry, and promote an environment conducive to innovation),
- **Demonstration** (implement specific interventions with countries, document and analyse ongoing experiences, and model potential impact and future possibilities)
- **Facilitation** (engage key partners within immunization and across public health, agree on the issues, develop a vision for the future, and ensure an implementation strategy is in place to achieve it)

The goal, by 2012, is to have all major stakeholders sharing an informed vision of optimal health logistics for the future and commitment to its achievement.

PATH

PATH is working to advance technologies that improve the vaccine cold chain; for example, “smart” refrigerators that keep vaccines cold without freezing, innovative refrigeration technologies for more efficient cooling, and lower-cost solar refrigerators without batteries that provide affordable refrigeration for more health clinics and facilitate immunization services in remote settings. PATH’s links with industry and developing-country partners ensure that cold chain solutions are practical, available, and affordable.

Building collaborative software solutions that improve management information systems (MIS) that underlie the cold chain infrastructure, PATH seeks to combine the competencies of professional software development companies and EPI partners. The expected outcome is appropriately designed and implemented software tools that can significantly improve the ability of immunization program managers to monitor vaccine distribution systems, vaccine stock, cold chain capacity, and vaccine safety.

To support the country systems needed to maintain availability of a technology in the long-term, PATH’s work also includes significant efforts to build capacity in procurement and logistics systems. Efforts are targeted toward identifying issues and creating solutions that enable integration of innovative technologies into procurement, logistics, and other relevant structures in developing countries. PATH works at the global level, to support donor and multilateral organizations develop multi-pronged procurement strategies. Strategies that address industry, country needs, and programmatic trends are important to the uptake and success of any technology or medicine. Most recently, PATH developed a Procurement Tool Kit to support capacity development as well as a five-year strategy for introducing new injection technologies into local markets.

UNICEF

UNICEF is the largest worldwide supplier of vaccines to developing countries. Its Supply Division (SD) procures vaccines for 80-100 countries. It also procures cold chain equipment and provides technical guidance on appropriate equipment for use in specific settings. UNICEF support includes installation of equipment at national and sub-national levels, such as cold rooms. SD functions for CCL include:

- Annual forecast – vaccines, devices, ITNs, cold chain equipment (New 2009)
- Technical evaluations and review of cold chain needs

- Technical support packages (new - planned Nov 09)
- Coordination of integrated campaign procurement and deliveries
- Data capture, analysis and reporting.

UNICEF support for CCL system strengthening received a boost in 2007-8 through implementation of a Government of Japan grant for pandemic preparedness of which \$8m was used to strengthen CCL systems in 17 countries in two UNICEF regions (EAPRO and CEE/CIS). As a result of this work, a 'priority needs template' was developed to provide structure to the kinds of support provided, and two key lessons already identified: the value of having funds to support priority needs linked to an assessment as well the critical need to strengthen human capacity in CCL systems, as a foundation to any other aspect of CCL system strengthening.

UNICEF is also concerned about the potential impacts of runaway climate change, and is seeking to increase its efforts to 'green' the cold chain. However, this effort has not yet progressed beyond work on the SolarChill, and the planned evaluations. Solar technology and alternative energy sources can allow refrigeration in areas without electricity or gas supplies.

WORLD HEALTH ORGANIZATION

WHO's constitution, set by the 193 UN member states, gives WHO several functions, including acting as the directing and coordinating authority on international health work; establishing and maintaining effective collaboration with the United Nations, specialized agencies, governmental health administrations, professional groups and other organizations as may be deemed appropriate; and assisting governments, upon request, to strengthen health services. Further WHO furnishes appropriate technical assistance and, in emergencies, necessary aid upon the request or acceptance of governments, to establish and maintain needed administrative and technical services, including epidemiological and statistical services, and promote maternal and child health and welfare.

In the area of Cold Chain and Logistics (CCL), WHO is responsible for:

- Assuring the quality of vaccines in all member states through a pre-qualification system that provides quality and safety support, even for countries unable to meet the full regulatory requirements
- Establishing and enforcing norms and standards in relation to vaccine, biological, cold chain equipment and injection equipment
- Developing and putting into practice programmatic policies and practices to support immunization programmes
- Providing technical support to countries in the area of vaccine management, storage and distribution, including their assessment and monitoring (eg EVM)
- Providing guidelines and standards for training and supervising national staff in vaccine management, storage and distribution
- Maintaining vigilance and providing support to countries in relation to vaccine safety (i.e. real or perceived adverse events following immunization).

At all levels, WHO and UNICEF strive to play complementary roles and rely on their presence and mandates in countries to deliver their activities.

In 2010, the main activities will centre around:

- Support to countries to prepare for the introduction of new vaccines
- Continue to revise the MDVP and policies on the use of vaccines in a controlled temperature chain
- Develop training institutes and materials to build global capacity in CCL
- Conduct global TechNet meeting and continue, with partners, to develop the TechNet e-forum
- Engage with priority countries to assure vaccine availability at all levels and to improve vaccine storage, distribution and handling.

Annex 4: Small Group Work

1. INTEGRATION

Issue(s)	Why? Specific main reason(s) for issue – in priority order	Action(s) to address issues
<p>CCL planning & implementation (storage, transportation, equipment...) not systematically integrated with Immunization program management</p>	<p>For a long time, CCL has not been a priority in national level immunization programs:</p> <ul style="list-style-type: none"> - Lack of country ownership (reliance on donors/partners) - Advocacy not well evidence based (e.g. Return On Investment); needs assessments - Countries & donors have not articulated CCL importance consistently (e.g. as country budget requirement) - Lack of institutionalised capacity due to rapid turnover of staff (trained staff move over to private sector) - Weak private-public sector collaboration 	<ul style="list-style-type: none"> - Partners to change the level in which they interact with the MoH on CCL related concerns (e.g. Director of Planning instead of EPI mgr), and integrate CCL into health sector annual review meetings - Based on lessons learned, CCL should be mainstreamed into Marginal Budgeting for Bottlenecks (or similar tools) to provide robust evidence that supports investment on CCL - Well developed EVM/VMA assessment findings to be integrated into CMYPs and Health Sector plans - EVM indicators to be part of national health plan monitoring and evaluation framework and WHO/UNICEF Joint Reporting Form - Establish functional CCL system as a pre-requisite for funding for new vaccine introduction - Define guidance on private sector engagement considering different country typologies
<p>Weak linkages / poor synergy between EPI and other health programs</p>	<p>Immunization programmes not aligned with national planning & budgeting cycles:</p> <ul style="list-style-type: none"> - No incentive to do due to vertical funding by donors/partners 	<p>Agree on a few countries where the partners/donors review jointly opportunities for more efficient ways of working towards fewer vertical activities.</p>

2. POLICY & ADVOCACY

Problem statement	ISSUES	Levers on stakeholders	PROPOSED ACTIONS
Country approval for introduction of new vaccines is endorsed without sufficient evidence of a functional cold chain and logistic structure at country level.	Vaccine purchasers do not include CCL assessments in funding decisions for NVI	“Protecting the investment” Partners to agree on a set of CCL criteria to be achieved by countries in order to be eligible to introduce New vaccines – regardless of whether through GAVI or other means.	<ul style="list-style-type: none"> • CCL assessments and inventory as a Go/No-Go decision for new vaccines introduction. • Have a bundled approach for NVI with costed cold chain capacity. • GHIs and donors agree to bundle NV investments with a costed cold chain
		HSS funding opportunity	<ul style="list-style-type: none"> • Linking CCL with the joint assessment and joint funding platforms (e.g. Joint Assessment of national strategies for HSS funding should include CCL criteria)
		Have the right people around the table.	<ul style="list-style-type: none"> • Regional and or global expertise (or national expertise where available) to provide technical facilitation
	Informed empowerment so that MoH & MoF makes good and technically sound decisions on NVI	Protecting the investment by MoH & MOF	<ul style="list-style-type: none"> • Ensuring capacity of WHO & UNICEF country offices to advocate for evidence-based planning, budgeting and costing of NVI and CCL investments; e.g. • ICC management & guidance to MoH & MoF on new vaccine introduction application, to use it as opportunity to have up to date CCL assessment/inventory • Ensure MoH makes fiscally sound arguments to MoF for increased funding of CCL to protect NV investments; e.g. through use of costing tools
	Waste management	environmental impact statements now required by many bilateral (CIDA, USAID)	<ul style="list-style-type: none"> • a waste disposal surcharge.
	Global level coordination: need to link changes in criteria for funding and technical support to require a CC capacity assessment to accompany decisions on NVI	Use global advocacy messages to raise awareness of need to protect investments in NVI by sufficient funding of foundation of immunization systems	<ul style="list-style-type: none"> • Develop multi-partners and endorsed global advocacy process, including messages, multi-partner statements, etc, to promote NVI funding to be tied to costed CC capacity assessment and inventory.

	Country level coordination discussions on immunization services, and NVI and CCL investments in particular, do not involve senior decision makers	Using Joint HSS funding opportunity to link the HSS coordinating and immunization coordinating mechanisms	<ul style="list-style-type: none"> • Country HSS coordination mechanisms to include content-specific technical inputs on immunization systems needs. • WHO & UNICEF Country Offices use convening ability to promote inclusion of immunization systems assessment and needs analysis included in high-level health policy meetings (e.g. HSS policy-making, health budgeting, etc.). • Link immunization costing to health systems costing and budgeting exercises.
	Insufficient human resources expertise available at country level, in terms of immunization, health financing and other technical areas relevant to CCL	Protecting the investments	<ul style="list-style-type: none"> • Advocate to donors on the need for national expertise to protect country level in investments in NVI and CCL. • Need Junior Professional Officers & a systematic approach to building up next generation of experts
<p>Advocacy messages: Protecting investments in NVI through Safe/effective supply management; Informed empowerment of MoH and Ministry of Finance; Preserving gains of routine immunization</p>			

3. FORECASTING, PLANNING, INFO SYSTEMS

Issues	Why? Specific main reasons for issue (in priority order)	Actions to address the issue
1 Cold chain equipment inventories are unavailable or outdated	Inventories are difficult to do, time consuming, outdate rapidly	Modify, finalize CCEM
	Lack of ability or will to do something about problems identified through inventories	Incorporate inventory into a replacement action plan
	Lack of ability, will, authority or funding to resolve local cold chain problems locally (esp. maintenance)	Where adequate management capacity, decentralize funding and authority for maintenance, or enable outsourced solution
	Inventories that are done are not shared	Shared site
	Lack of standardization of equipment	
2 Storage and transport capacity are insufficient for the introduction of NV	Insufficient long term planning view to prepare for new vaccines introduction (come to the attention only when it becomes a problem)	Thoughtful cMYP and integrate health sector planning
	Lack of investment in infrastructure	Advocacy
	Govt inability to pay, lack of understanding or inadequate budgeting for recurrent cost (maintenance, fuel, etc) or long term replacement cost	Enable ongoing accurate costing exercise, and subsequent resource mobilization both with govt and partners
	Storage inadequate due to poor forecasting, ordering or distribution	Capacity building, supportive supervision
	Surge store and transport capacity lacking	Involvement of non-govt and private sectors and govt commitment to assure funded contracts
	Storage / transport of EPI seen as separate system	Integrate EPI into other storage and transport systems
	No donor organization supports transport, fleet, maintenance	Advocacy
3 Absent or unclear performance monitoring indicators	Potential funding shortfalls are not pro-actively addressed	Identify potential problem, sharing of information and communicating to countries
	Lack of knowledge / understanding in relation to stock levels	Quantity of vaccines in stock with defined upper and lower levels
	Stock-outs	"Immediate reaction" indicator. Ensure that someone has the responsibility to react
	Broken cold chain / inoperative fridges	"Immediate reaction" indicator. Ensure that someone has the responsibility to react
	Poor quality vaccine	Proportion of vaccines with changed VVM included in SOP
	Temp alarm	
4 Inadequate information system and feedback for vaccine forecasting	EPI supervisors unaware or unwilling to address CCL issues	Integrate CCL indicators in supervision tool
	Vaccines pushed to sub-national / district levels irrespective of stock levels	Pull system established at sub-national levels
	Sub-national / district staff are knowledgeable how to adequately pull adequate vaccines	Assure staff capacity
	In-country ordering system is uninformed by actual central store stock levels	Support to MoH by in-country partners, both in forecasting and in informing the subsequent orders
	Lack of govt funding release	
	For GAVI vaccines, countries may request further vaccines in spite of sufficient existing stock to avoid losing the vaccines	
	Data in SD is not shared with other interested partners	Access to stakeholders to the data
	Data available in SD is inadequately analysed and interpreted	
Agencies internally insufficiently staffed or inadequately prioritized to provide adequate support	Internal advocacy that technical positions are pivotal	

4. IN-COUNTRY LOGISTICS AND CAPACITY

Issue(s)	Why? Specific main reason(s) for issue – in priority order	Action(s) to address issues
Customs clearance of vaccines and supplies by gov't delayed/not taking place	Lack of funds	Advocacy from partner agencies to government to secure budget, focusing on vaccine security aspect.
	Required procedures & agreements between government departments not established	TA to establish procedures if necessary.
Lacking equipment inventories to identify the storage capacity needs at all levels (cold chain and dry storage)	Difficulties in data collection and management to keep data updated – Need of comprehensive inventory based on standard template and guideline	Find innovative low-cost solutions to monitor and update inventory data at regular intervals
	Difficulty in accessing standard guidelines and tools	Disseminate existing standard tools (CCM, excel-based, etc.) to all regions, build capacity in countries and among consultants based on the recent pilot project implemented in Uganda (PATH, WHO, UNICEF)
Dry storage capacity at all levels	Underestimation of dry store capacity needs	Assessment of the current dry storage capacity at all levels and address identified problems when necessary Review existing tools and guidelines Explore outsourcing possibilities
Distribution and transport-at all levels		Assessment of the current transport system and gaps Explore outsourcing possibilities Review of existing tools and guidelines, best practises on fleet management (Riders for Health, TransAid, WHO, JSI...) Develop guidelines if necessary Improve operational management and information systems
Lack of maintenance /equipment for infrastructure and equipment (cold chain and transport)	No plan for preventive/curative maintenance	Explore outsourcing possibilities Build in-country capacity, training Map existing key documents and guidelines Develop indicators for maintenance and include in monitoring Peer exchange of best practices
Human resources	Quantity and quality not sufficient High turnover Lack of qualified international consultants	Improve the quality of trainings, building national capacity Establish a roster of international consultants Advocacy on the importance of the logistics function (managerial function)
Financial support		Build an evidence-based investment case for country level advocacy
Tools and guidelines	Too many tools from different resources	Set up an effective platform (web and CDrom) for easy access to tools, guidelines and training materials and latest information

Annex 5: CCL Glossary & Definitions

For consistency in the understanding and use of terms, it is important to have agreed definitions. An initial set, included below, was provided to the Workshop but will need further development.

Vaccines are complex biological products that can be damaged by heat or freezing, and generally need to be stored at 2-8°C from the point of manufacture to the point of use: this is the **cold chain**.

The **CCL system** includes: (1) a management information system capable of collecting and reporting data; (2) a stock inventory control system to ensure proper management of all supplies; (3) storage and warehousing of adequate capacity and quality to ensure their integrity; (4) a distribution/maintenance system for efficient transport to every immunization session; and (5) sufficient number of trained personnel at every level, with adequate supervision.

Logistics	Activities related to selecting, financing, procuring, and distributing health supplies. Logistics encompass human resources, ongoing operational costs, transportation and distribution, maintenance guidelines, dry storage needs, and many other factors.
Supply chain	Describes the organizations that are linked in the delivery of supplies from manufacturers to clients, and in the flow of information about clients' needs
Logistics Pipeline	Refers to the flow of supplies through storage and transportation facilities (ports; central and regional warehouses; district and sub-district stores; service delivery points; and clients)
Integrated Logistics	Integrating several activities within a programme, such as: supervisory visits to health centres; resupplying commodities; data correction and report collection; waste collection for central incineration; brief training activities, etc.
Estimated Consumption	Calculated quantity of supplies based on past data and believed to be needed in the future. This term does not refer to the amount that should be immediately procured.
Stock on Hand	Quantity of supplies in the warehouse waiting for distribution, plus the amount that will definitely be received in a short time.
Lead Time	The period from ordering supplies until they are ready for distribution from that point.
Delivery Interval	The interval between two order (issue) periods. If a Ministry of Health makes two deliveries to the provinces in a year, the interval is six months.
Safety/Buffer Stock	The quantity of supplies in an institution that should be kept in reserve against logistics system errors, losses (fire, flood, theft) or unexpected increases in demand. A general rule is to keep enough supplies for half of the delivery interval.
Minimum Stock Level	The minimum amount of stock that an institution should keep on hand, calculated by using average monthly consumption as a base. It is expressed with a "time" unit (1 month of BCG, 2 months of Vit A stocks...). The "quantity" equivalent changes according to the institution's consumption.
Maximum Stock Level	The maximum amount of stock that an institution can keep on hand, calculated by using average monthly consumption as a base. It is expressed with a "time" unit (3 months of Vit A, etc...). The "quantity" equivalent changes according to the institution's consumption.

Annex 6: Agenda & List of Participants

Day 1: Monday, 2 November 2009

08:30 Welcome and Objectives of the workshop & introductions

09:00 Plenary session:

- CCL Taskforce Vision and Goals [Oz]
- Partner updates and respective contribution to CCL goals
 1. WHO
 2. PATH/Optimize
 3. GAVI
 4. UNICEF/SD
 5. JSI
 6. AMP

11:00 Plenary session: **What are the priority issues to address for CCL system strengthening over next 2 years?**

Note: this will be a plenary written exercise and discussion that will list priority issues as perceived by participant individually and as a whole. Every participant will write down up to 3 issues, questions, or obstacles that need to be addressed as a priority to strengthen CCL systems for new vaccine introduction. The exercise will be further explain, as will be the process to make sure that they are all addressed, and as a group all important issues are considered adequately covered in later discussion.

12:00 Plenary session: **EVM and its role as the key assessment tool** [PATH: Optimize pilot results]

The key question is whether the new EVM tool adequately assesses CCL system readiness for new vaccine introduction. Potential changes to make sure it does, and/or need for any complementary tools/approaches.

14:00 Small Group Work

Objective of each small group is to review the key issues per topic using the outcome of the written discussion, agree on the main causes of key issues and list specific actions or recommendations needed to overcome the issues. identifying those existing, and those still missing ready recommended or not.

17:00 RapidSMS and other technology options [Erica Kochi, UNICEF]

Day 2: Tuesday, 3 November 2009

08:00 *Coffee/tea & light refreshments will be served*

08:30 Plenary session: Presentations & Discussions of Group Work

Presentations of each small group's conclusions to ensure overall consensus. If consensus is not present, identify approach to reach it for 'next steps'.

11:00 Plenary session: continues

After all groups have presented, further discussion on any critical issues that have not yet been addressed

14:00 Plenary session: CCL system monitoring and data sharing

1. Review of indicators in JRF and other potential indicators to monitor performance [Oz]
2. UNICEF SD approach and data
3. WHO

Discussion questions: What should be in JRF and how do we use that data to improve its quality? What priority data should be shared by agencies and how? How frequently? Next steps

- 16:00 Country prioritization
1. Review of each agency activity in each country to identify overlaps and omissions.
 2. Identify countries introducing new vaccines and not covered, to address these gaps
 3. How to coordinate and share progress and lessons learned?
- 17:00 Key Recommendations/Actions
Each participant to identify the top 3 of all these ones proposed to data

Day 3: Wednesday, 4 November 2009

- 08:30 Recap of agreements and recommendations
09:00 Discussions on the follow-up actions:
13:30 Close of Day 3

Facilitators: Eric Laurent, Francois Gasse

- **AMP:** Philippe Jaillard
- **CDC:** Carla Lee
- **Gates Foundation:** Tasleem Kachra
- **GAVI Alliance:** Mercy Ahun
- **JSI:** Robert Steinglass, Ousmane Dia, Michel Othepa
- **PATH/Optimize:** James Cheyne
- **UNICEF PD:** Ahmet Afsar, Dragoslav Popovic, Erica Kochi, Jasmina Acimovic, Kaisamaija Valimaki-Erk, Oz Mansoor, Tom O'Connell
- **UNICEF SD:** Ibrahim El-Ziq, Annika Salovaara, Bertrand Jacquet, Robert Matthews
- **WHO:** Rudolf Eggers

UNICEF ROs:

- **CEE/CIS:** Oya Afsar
- **EAPRO:** Basil Rodriques
- **ESARO:** Yodit Sahlemariam
- **MENA:** Mahendra Sheth
- **ROSA:** Yin Yin Aung
- **TACRO:** Paulo Froes
- **WCARO:** Philip Van De Graaf

CCL Taskforce Vision, Goals, and Outcomes

The CCL Taskforce workshop built on the Vision and the five identified goals articulated in the CCL Taskforce meeting of November 2007.

(http://www.unicef.org/immunization/files/CCL_Mtg_1Nov07_report.pdf)

Vision: The capacity of National Immunization Programmes (NIPs) is strengthened so that every individual can benefit from vaccines of assured quality delivered in the right amount at the right time through efficient logistics, proper vaccine management, and a well-functioning cold chain system.

Goals: Partners work together to develop (1) a framework for CCL strengthening; (2) indicators to monitor progress at global, national, and sub-national levels; (3) methods and database

for sharing information; (4) list of priority countries for support; and (5) well-defined roles for each agency.

The aim of this work is to help national governments strengthen CCL systems to ensure that:

- Adequate number of vaccines are available for every immunization session
- Vaccine wastage is minimized without affecting coverage
- Vaccines are stored and transported without temperature damage
- New vaccine introduction is not constrained by lack of storage/transport capacity
- There is greatly increased coordination and a commitment towards effective integration with procurement and management of other priority health commodities.

Report prepared on behalf of the Cold Chain and Logistics Taskforce by UNICEF.