Report of
WHO Expert Consultation
on
Training Methodologies

19-20 November 2012

International Children's Center

Ankara, Turkey

Acronyms

CMYP	Comprehensive Multi Year Plan
DVD	Digital Versatile Drive
EPI	Expanded Program of Immunization
FGD	Focus Group Discussions
FIP	International Pharmaceutical Federation
GAVI	Global Alliance for Vaccines and Immunization
HRH	Human Resources for Health
ICC	International Children's Centre
IT	Information Technologies
LFP	Learning for Performance
M&E	Monitoring and Evaluation
MLM	Mid-Level Managers
MoH	Ministry of Health
OPQ	Optimising Performance and Quality
PCV	Pneumococcal Conjugate Vaccine
PIE	Post Introduction Evaluation
RED	Reaching Every District
WHO	World Health Organisation
WR	World Health Organisation Country Representative

Expert Consultation on Training Methodologies was held in the International Children Centre (ICC) in Ankara on 19-20 November 2012.

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1. Background

The vision for the Decade of Vaccines (2011–2020) is of a world in which all individuals and communities enjoy lives free from vaccine-preventable diseases. The mission of the Decade of Vaccines is to extend, by 2020 and beyond, the full benefit of immunization to all people, regardless of where they are born, who they are or where they live. In the last 10 years, great advances have been made in developing and introducing new vaccines and expanding the reach of immunization programmes. New and increasingly sophisticated vaccines that have become available in the last decade, including pneumococcal conjugate vaccine and vaccines against infection with rotavirus and human papillomavirus, are currently being rolled out globally.

Despite this progress, vaccine-preventable diseases remain a major cause of morbidity and mortality. Adoption of new vaccines by low- and middle-income countries (where disease burdens are often the highest) has been slower than in high-income countries.

The increasing complexity of immunization programmes and ambitious new goals, mean that more trained health workers are needed to manage the increased burden of work, including programme managers at the national and sub-national levels as well as front-line workers who deliver services and interact directly with communities. Front-line health workers, who deliver not only vaccinations but also primary health care interventions and health education, need coordinated, comprehensive and very practical pre- and in-service training, with updated, relevant curricula and post-training supervision. Health-care workers need to be able not only to explain why immunization is important, but also to give advice to individuals and communities on nutrition, create a healthier environment and recognize the danger signs when someone falls ill. Immunization programmes should ensure that this training and supervision is effectively extended to community-based health workers.[1]

Many new vaccines are now available to countries at affordable prices through GAVI which also provides 'introduction grant' for countries to train staff on the new vaccine. New vaccines have new and different vaccine handling and delivery techniques. All health workers need to be trained well otherwise; there is risk on safety and risk on demand.

Even in countries which claim that all their health staff were trained by using cascade methodology there are still common performance issues related to the cascade methodology training;

a. During assessments of health centres, open vaccine vials (such as PCV 10 which needs to be discarded after each session) were found in the refrigerator
b. Vaccine damaged by exposure to high temperature or frozen
c. Parents not being informed about the vaccine and the side effects, when to return etc.
d. Not following the correct injection technique
e. Not following up with children who do not return for vaccination (defaulters)

This consultation is based on the literature review conducted by International Children's Center which focused in evaluating training approaches commonly used to train health staff, determining the effectiveness of different training strategies and models, with special emphasis on cascade training strategy, reviewing cascade training approach and trying to find out possible implementation of alternative strategies in place of cascade strategy or how the cascade approach (cascade plus training approach) can be improved and be more effective in the immunization programs (Annex 1). The agenda (Annex 2) and the list of participants (Annex 3) are at the back of the report.

1. Global immunization vision and strategy:, Progress report and strategic direction for the Decade of Vaccines, World health assembly document A64/14

2. Objectives and Process of the Consultation

The meeting objectives were to find answers whether common health staff performance issues derived from the cascade training methodology or the implementation of the cascade methodology; If so how it can be strengthened to have better teaching-learning outcomes. More specifically, four objectives were set.

First, to discuss and finalize the literature review and expert interview findings

Second, to devise a protocol / guideline for training large number of health workers outlining main activities to conduct pre, during and post training

Third, to advice on pilot testing of the protocol

Fourth, to advice on outputs of the literature review

The consultation was organised around presentations, general discussions, group works and small-group discussions. In total, six sessions were organised:

a. Overview the Literature Review
b. Pre-training Strategies (Trainers, Trainees, Content, Process)
c. During-training Strategies (Trainers, Trainees, Content, Process)
d. Post-training Strategies (Trainers, Trainees, Content, Process)
e. Optimizing Performance and Quality Framework
f. Recommendations and Way Forward

3. Presentations and Discussions

Although important progress has been achieved in controlling communicable diseases, many vaccine preventable diseases are still threatening health of people living in low income countries of the world. The common goal of the WHO and all countries is to raise the immunization rates to its maximum levels and eliminate the life-threatening communicable diseases. In order to raise the immunization rates, the WHO and countries are taking several measures to ensure health services available and accessible for everybody, a reliable cold chain, sufficient budget etc. Along with these strategies, continuous training of professional vaccine providers, health care managers and volunteers and evaluation of the program is crucial. Even if these health workers are trained in pre-service and/or before they start working in the immunization programs, all immunization personnel need in-service training as well. They have to update their knowledge and skills according to the new advances (vaccines and technologies) and new strategies in the immunization programs. The critical question is how best to train the health staff.

The issue-specific perspectives are presented within these themes. Experiences and concrete examples are presented by the experts to guide the reader on enhanced modifications and steps could be applied to cascade strategy for strengthening its effectiveness in several countries, although not necessarily in all.

This report is a presentation of suggested modifications to the cascade strategy with the most important and feasible steps expressed by the experts in the consultation.

4. Lessons Learnt and Core Recommendations

The participating experts stated the major lessons learned and recommendations based on their experiences for better implementation of cascade training approach as below:

- Define training needs while considering the root causes of the training, local environment and required skills
- Determine training materials by using needs based education model
- View training as on-going process, generally the interest of the donor ceases as soon as the new vaccine introduced. Monitoring, coaching and refreshing trainings should be given to old staff and newcomers. These need to be planned and budgeted from the beginning
- Enhance the training content by using simple, understandable and visible elements
- Provide means to maintain access to materials e.g. manuals, tools etc.
- Other aspects and factors that may have impact on the end results need to be considered
- Use the process evaluation to determine weak points of trainings and how to address them. The evaluation should be conducted as needed and periodically
- Involvement of health authorities at all level is crucial. Application of any suggested methodology needs to be localised for success
- According to the literature review unsuccessful training outputs are not directly related to the cascade methodology but the way it is implemented
- Identify the person in-country who has the responsibility for training and provide guidance to that person in a simple document
- A systematic approach is needed within the country to plan and implement training procedures
- It is needed to articulate clearly what is new and different with the proposed methodology and how it will improve the training in that country
- Identify what the country has in the way of supportive supervision. What is needed to improve their performance? EPI managers know what training is needed but often have barriers such as funding or staffing problems. Plan of action should come out of an investigation of what and how a country is currently managing EPI training
- Receive the support of public and media

5. Suggestions on Training Phases

The participating experts agreed upon that the effectiveness of cascade training approach increases if the pre-training, training and post-training phases are taken as a whole. Taking this understanding into consideration, the participants worked in groups on the activities that should be considered in these three phases.

5.1. Pre-training Phase

Higher level political engagement required in training master plans to guide donor input. Four areas need to be stratified against trainer levels (In general the following applies to all levels). It is important to remember that, everyone is a trainer and trainee.

5.1.1. Trainers

1. Need minimum set of learning and teaching competencies (e.g. adult learning principles, methodologies)
2. Trainer workforce can be full-time or taken from a pool whenever necessary
3. Consider a team for facilitation approach (Don't leave people on their own, consider co-facilitators / e.g. content expert with training expert)
4. National and local network of trainers
5. Consider quality measurement of trainers performance (self-assessment, built into the M&E)

5.1.2. Trainees

1. Need to be chosen against agreed criteria
2. Assess their level of literacy and understanding
3. Consider their learning needs, cultural influences on learning and teaching

5.1.3. Content

1. Role of the training in broader health system context
2. Consider other needs (e.g. tools), to ensure the competencies learnt can be applied to the workplace
3. Content committee needs to have end users in mind when developing training materials. (e.g. cultural relevance, review of content, review of methods.)
4. Use feedback from previous training, or 'other' training where no previous training has been conducted
5. Learning for performance criteria:
   - Clear learning objectives
   - Outcomes expected
6. Consider competency assessment requirements

5.1.4. Process

1. Consider the whole process through to follow up, mentoring, refresher training, monitoring and evaluation system
2. Organisation of activities and logistics (e.g. stationary, technology)
3. Needs to be an overall understanding / planning/ on-going evaluation of the whole/total cascade process (all levels of the cascade)

5.1.5. Issues discussed following pre-training group presentation:

1. Including funding of follow up activities following the training, to follow up, use of a framework
2. Considering the government commitment and donor contribution
3. Training master plan at the country level; Pooling of training resources for the master plan; Considering GAVI introduction plans and CMYP guidelines.
4. Considering link with HRH when making the master training plans; Integrating ideas and ensuring relevant monitoring elements (e.g. competency)
5. Funding flow is often the overarching driver for country focus

5.2. During-training Phase

Followings are the constraints confronted during training phase and possible solutions.

5.2.1. Lacking Confidence

1. Identify the skills of the trainers before training
   - Need to have a job description of trainers
   - Provide appropriate training modules for the trainers to build their confidence
2. Need to convey adult learning techniques to the new trainers

5.2.2. Short training period

1. Mentoring after training
2. Good evaluation protocols
   - indicators & objectives set in advance
3. Pre-assess the skills of trainers
   - match training to previous experience and background
4. Competency-based training needed
5. Set criteria for the team leader. Needs to be well equipped to be a trainer
6. Establish a community or team of trainers to support each other

5.2.3. More a pre-training issue

1. All those in the EPI system need to be consulted when concept being developed
2. The delivery context at the intermediate and local levels is important. Must address the issues at that level
   - Identify the level of training so the sessions are appropriate

5.2.4. Management responsibility and local conditions

1. The trainer needs to advocate to the management and trainees the need for training
2. If necessary, take the training to the health workers and/or train the managers first
3. Blend appropriate learning techniques according to the conditions (e.g. on the job training, distance learning, computer-based training)

5.2.5. Management responsibility

1. Management sets session plan, has a list of attendees, and ensures facilities and equipment available

5.2.6. Central monitoring

1. Obligation of management to ensure training occurs
2. Feedback from the trainers to the management how the training is going and give feed-forward to the trainees about how they are progressing
3. Record those who attend training session at local and management levels

5.2.7. Quality assurance

1. Work as a team
2. Trainees assessment of their trainers, peer review, mentoring and occasional monitoring
3. Need for more than one trainer – 2 to 4 seems appropriate

5.2.8. Revise training content

1. Pilot testing is important to minimize the problem later

5.2.9. Dilution & misinterpretation

1. Continuing learning techniques such as eLearning or computer-based learning
2. Train-the-trainer sessions need training learning guides/checklists. Also trainers and trainees have guides to monitor their progress.

5.2.10. Issues discussed after 'during- training phase' group presentation

1. Before scaling up need to test ideas
2. Pilot to test original concepts, need to make sure on-going review is built in
3. Trainee empowerment – need input into the design phase of what you need training in, need to include the trainees in the planning phase and learn their needs
4. Consult all levels at the conceptual stage
5. Ensure a link with pre-service
6. Consider training needs assessment; available skills, gaps
7. Consider involving consumers in the development of programs
8. Consider engagement of academic institutions in the process
9. Curriculum review process involving experts
10. International nursing council review of materials, health professionals for 21st century, FIP quality framework for education
11. Dealing with high staff turnover. Orientation procedures for new staff with access to link with standard treatment guidance book, program management resource

5.3. Post-training Phase

The overall aim of the training process (cascade training) is to reach the planned outcomes of the programme. Training of the trainers and the end staff will ease to reach these targets. Even if the training is done very well, unless the implementation at the post-training phase is not well enough, the aimed targets cannot be reached. Therefore, post-training phase is a crucial part of training process.

5.3.1. Post-training Managerial Skills Development

1. Practice ways of evaluating the effectiveness of your training course (target competences), trainers and training method
2. Develop a system to appraise whether trainers are applying the skills required
3. Create new resources/share resources among trainers after training finishes

5.3.2. Practical suggestions

1. Community of Practice
   - Coordinator of master trainers needs to be identified
   - Select a tool to share info (e.g. email, forum, wikis, IT platforms)
2. Ensure training team has the skills collectively (integrated team concept). Limited resources availability can sometimes solved through proper planning
3. Monitoring Dashboard. Indicators and value ranges have to be identified upfront. Indicators cover quality implementation and outcome (Have skills been applied? Are we ensuring all communities are covered? Has the training happened?)

4. On the job monitoring (peer-to-peer). This can also take advantage of already established events
5. Key fact sheet (health workers toolkit) with follow up distribution

5.3.3. Acknowledgement of the trainees' effort

Motivation of the trainers is important and has to be ensured (Simple recognition from managers above e.g. six monthly, supervisors visiting the healthcare worker in their work context, announcing success in bulletin, promotion etc. Need to renew trainers when people get tired and may help motivate others. Ensure trainers have achievable goals. Ensure trainer has the tools they need to do their work. Appropriate titles should be given. All these relevant to the level of the trainer.)

5.3.4. The need for supervision

Design a mechanism for follow up of trainees after the training. Use of mobile phone technology for refresher and follow up should be considered. Include access to the materials that were used during the training as a reference

5.3.5. Issues discussed following post training group presentations:

1. Caution with use of incentives that the incentive doesn't become the norm. This does not rule out their use
2. Second level trainers, how to keep motivated and keep knowledge transfer beyond the intervention. (refer to WHO rural retention of health care workers documentation)
3. Think widely and approach different roads in order to reach the planned targets. (e.g. 1985 Turkish Nationwide Immunization Campaign - Government engagement, other sectors, logistics, consumers, community leaders, media etc)
4. Ensure trainers have the necessary practical skills not just the theory, ensure they have knowledge
5. Profile of master trainer in community is important
6. Need motivation of manager to follow up people

6. Applying the Strategy to Real Country and Content (Optimizing Performance and Quality)

6.1. Operational training plan

6.1.1. Situating current training in the context of broader HRH plans

1. Use process such as Optimizing Performance and Quality (OPQ http://www.intrahealth.org/files/media/optimizing-performance-and-quality/OPQ_FINAL.pdf) to determine the broader context in which the training is to take place
   - Context: external environment, community/organization/workers/patients
   - Stakeholder engagement/ownership/leadership
   - Identify gaps and strengths
   - Find root causes
   - Select and design interventions
   - Implement interventions
   - Monitoring and evaluation (M&E)

2. Identify the "performance gaps" that are related to "knowledge and skills" so can be addressed through cascade training
3. Ensure plan and budget are included in the upcoming cycle

6.1.2. How to conduct a training needs assessment

Use methodology such as Learning for Performance (LFP, http://www.intrahealth.org/~intrahea/files/media/learning-for-performance/learning_for_performance_guide.pdf) to assess the training needs and plan the training intervention.

1. Specify the learning goal related to the gap in skills and knowledge
   - Tool 1: Sources of Information worksheet
   - Tool 2: HRH Context worksheet
   - Tool 3: Performance Factors worksheet
2. Learn about the learners and their work setting
   - Tool 4: Learner Characteristics worksheet
   - Tool 5: Work Setting Characteristics worksheet
3. Identify existing resources and requirements for training and learning
   - Tool 6: Resources and Requirements worksheet
4. Determine job responsibilities (or competencies) and major job tasks related to the gap in skills and knowledge
   - Tool 7: Job Responsibilities or Competencies and Tasks Worksheet
5. Specify essential skills and knowledge
   - Tools 8: Essential Skills and Knowledge Worksheet
6. Write learning objectives
   - Tool 9: Instructional Planning Worksheet
7. Decide how to assess learning objectives
8. Select the learning activities, materials and approaches and create the instructional strategy
   - Tool 10: Instructional Program Overview
9. Develop, pre-test and revise lessons, learning activities and materials, and learning assessment instruments
   - Tool 11/12: Lesson Plan
10. Prepare for implementation
11. Implement and monitor learning and logistics
    - Tool 13: Sample Action Plan for Transfer of Learning
12. Assess effectiveness of the learning intervention and revise
    - Tool 14: M&E Plan

6.1.3. How to use training needs assessment in preparing operational plan (included above)

6.1.4. How to decide the cascade levels (no. of trainee per training, availability of master/ mid-level trainers, costs etc.)

1. Factors to consider
   - How many need to be trained
     - Master trainers

- Subsequent levels of trainers
- End users (providers)
- Budget constraints
- Time constraints

6.1.5. How to select different training methods (use of video, e-learning) for each level of cascade

1. Master and subsequent trainers: blended
   - Self-directed distance/on-line for factual content
   - Face-to-face for training practice
   - Participatory (problem based, case studies/scenarios/dramas/role plays/teach backs
   - Peer learning/Community of Practice
   - Mentoring
   - Learning by doing
2. Training providers (implementers) : blended
   - Self-directed distance/on-line for factual content
   - Face-to-face for training practice
   - Participatory (problem based, case studies/scenarios/dramas/role plays/teach backs)
   - Peer learning/Community of Practice
   - Mentoring
   - Learning by doing/on-the-job
   - Refresher training (face-to-face, eLearning, mLearning)
   - Drip training

6.2. Master trainers

6.2.1. Who should be a master trainer

1. Knowledgeable and experienced in the immunization field, familiar with the country (including its health system and human resources), senior level, proven competency to use training techniques (adult learning)

6.2.2. How to select master trainer

1. If anybody available with the above characteristics, the EPI manager (assisted by academicians, senior managers, previous EPI, MoH officials, International Organizations) will set-up a team of master trainers. Otherwise, the EPI manager (assisted by the same group of people) will find the most appropriate candidates and provide training as required
2. Outsiders (from another country) might be considered as well, provided they meet the abovementioned requirements
3. This may differ from country to country. In some cases, MoH might select master trainers (directly or through a consultant)

6.2.3. Who and how train master trainer (content versus training skills)

1. Two main areas of training: a) Technical skills, b) Training skills (training design, techniques and communication)
2. A)EPI managers, WHO experts, Academicians, previous master trainers, medical officers
3. B)Training methodology professionals at the national/international level

4. Provide basics of immunization through on-line content (pre-technical training reading). Following this, master trainers would participate in a workshop to go through the more advanced aspects of A) + B) + agreeing as a group on the follow-ups for the subsequent trainings

6.2.4. Roles and responsibility of master trainers

1. Agree with MoH and EPI manager on a set of performance indicators (based on the experience from other countries as well)
2. Contributing to design training materials
3. Training next level
4. Monitoring training given by next levels and contributing to it (training team concept)
5. Mentoring next level
6. Contributing to community of practice
7. Monitoring the Dashboard
8. Feedback to EPI managers about issues, potential improvements, trainers (next level)
9. His/her role continues after the training finishes

6.2.5. How to keep master trainers motivated

1. Formalize the role in the job description
2. Certify the master trainers (curriculum)
3. Acknowledgement of his/her role as expert in an international pool of experts that can be drawn upon as required.
4. Provide his/her with the appropriate equipment to perform the job (all facilities put in place to make his/her life easier)

6.2.6. How to monitor performance of master trainers

1. Agree on a list of objectives upfront
2. Pre-test and post-test of trainees
3. Peer review
4. Yearly re-assessment mechanism for master trainers

6.2.7. Key resources to give master trainer

1. Equipment (laptop, audio-visual equipment, transportation facilities) and logistical arrangements (accommodation, classrooms, flipcharts, markers, clinics), materials (on-line repository of training materials and tools – attendance sheets, evaluation questionnaires), assistant

6.3. Mid-level training

6.3.1. Who should be a mid-level trainer

1. Should be just two levels of trainer from the Master trainers to minimize the dilution of information. Could be an expert body that trains the Master trainers.
2. Professional, e.g. doctor or midwife
3. Good personal communication skills
4. Someone who volunteers not assigned against their well

5. Familiar with health workers activities in the field. Perhaps someone working in the field who trains occasionally
6. Knows and uses adult learning techniques
7. Cultural consideration of the gender of the trainer
8. Middle aged and experienced; better accepted by the trainees
9. People who are likely to stay in that location and not emigrate
10. Trainees should have some experience with the technology being used
11. Trainees need to be able to travel and should not have family responsibilities that stop them

6.3.2. How to select mid-level trainer

1. Selection criteria for what a trainer should be able to do
2. Select people who want to be trainers
3. Advise managers that their staff will be doing training as part of their job
4. Advertise for people to volunteer for training, then select best candidates, rather than just nominating people

6.3.3. Who and how train mid-level trainer

1. General training to be done by master trainers and specific subject training by experts in that field, e.g. rotavirus vaccine administration
2. Training should be continuous/refresher
3. Use eLearning training if available
4. On-going mentoring by master trainers
5. On-going refresher training during supportive supervision/monitoring of training
6. Country health system policies need to be conveyed to trainers
7. Continuous peer review and support from fellow trainers

6.3.4. Roles and responsibility of mid-level trainer

1. Training next level
   - needs assessment; what do the trainees know
   - session plans, evaluation guides during training
   - identify learning objectives
   - prepare documents for use/distribution during session
   - find and prepare facility; sort out logistics such as per diems, etc
   - obtain or prepare equipment needed during training
2. Observing training given by next level
   - observe service providers to evaluate the uptake of training
   - identifying gaps in training
3. Mentoring next level
   - supportive supervision
   - use of phone calls and email to stay in touch with the trainees
4. Contributing to community of practice
   - establish a network of trainers in that District
   - establish good communication with program managers
   - advocate for the need for training in selected areas
   - advise management levels how to strengthen training procedures to improve outcomes

6.3.5. How to keep mid-level trainer motivated

1. Showing appreciation for their work – "thank you"
2. Giving a title such as "Trainer" or "Senior Trainer"
3. Culture-based motivation
4. Uniform for the trainers
5. Additional wages or annual leave

6.3.6. How to monitor performance of mid-level trainer

1. Standard performance assessment tools such as questionnaires and check lists for use by master trainers, trainees and peer trainers
2. Statistics for performance of trainees over time indicates the performance of trainer. The more people/diseases being seen indicate the providers skills and therefore the performance of trainer

6.3.7. Key resources to give mid-level trainer

1. Training curriculum for use during day/week
2. Informative document detailing the national program
3. Adapted WHO documents and protocols
4. Learning equipment such as data projector/computer, manikin, flip charts, etc.
5. EPI supplies such as syringes, vials, etc to demonstrate procedures
6. DVDs, video, IT learning resources to show best practice
7. Reports, videos, and other examples of this type of training in other regions

6.4. Curriculum development

Scope of "content": learning content (knowledge and skills), learning techniques, delivery modes, assessment and evaluation protocol (during and at the end of the course)

6.4.1. Who should be involved in developing content?

There should be a curriculum committee composed of content expert, instructional designer, local academicians, cross section of relevant health care personnel (e.g. EPI manager, district officer, end user [participant]), and consumer. The master trainer should be the head of the committee

6.4.2. How to ensure key messages/ content does not get diluted

1. The trainer should have the skills to stick with the prescribed program (not change)
2. Appropriate content or source documents that are used throughout a comprehensive training package including learning material, trainer guideline, trainee guideline, and evaluation tools.
3. 2 training packages;
   - Master trainer
   - Other trainers

Technical content will be the same but management of training will be different (different responsibilities)

4. Comparison of initial knowledge level to final knowledge level (assessment/pre and post-test)
5. Comparing of participants results between different level of deliveries or compared delivery of different trainers

6. Using participatory learning techniques to check comprehension of new knowledge gained during the course

6.4.3. Methods to validate the content (review, pre testing)

1. External review panel with cross section of relevant health care personnel (E.g. EPI manager, district officer, end user [participant]), and consumer
2. Testing the training package 1 by the intended participants: master trainer
3. Testing the training package 2 by the intended participants: other trainers

6.4.4. How to build in mechanisms to get feedback from grassroots levels

1. Develop a monitoring and evaluation plan including the needs for trainers for feedback assessment (knowledge and skills gained) and evaluation after each delivery
2. Platform that allows participants to give feedback to the trainer/master trainer on the training session or the way they implement the new knowledge and skills in the workplace
3. Formal workplace follow up of a subset of participants to assess the extent of workplace change

6.4.5. How to easily revise content over time

1. The master trainer is in charge of the curriculum review: the curriculum should be **dated** and **updated** on a regular basis e.g. yearly/2 years/if sudden significant part of the learning content changed
2. Considering a review date or expiry date to enforce the review process

6.5. Post-training activities

"Cascade Plus Training" needs to address the resources (human, financial, operational) necessary at all levels for the training and follow-up, as well as the monitoring and evaluation at the next levels down in the cascade to ensure that trainers and trainees are able to maintain the expected knowledge, practices, and behaviours. At the training planning phase (e.g. as the introduction plan for new vaccine is being developed), consideration should be given to how the quality and outcomes of your training will be ensured and maintained and that those who have been trained (or who will be coming into the system subsequently) have the ability to implement the practices and reporting correctly. This should include a process evaluation of your cascade training. If the process evaluation of the training determines that the training objectives were not met, then actions need to be taken immediately to correct this. For example, the initial training may not have provided sufficient time for staff to develop necessary skills or adopt practices and therefore additional follow-up is needed.

Below are some suggestions on ways to support performance improvement post-training:

6.5.1. Supportive supervision

As part of the capacity building process, the training should be linked with the performance expectations of the health staff at the various levels (e.g. regional and district managers, vaccinators, health assistants/educators). The skills that you have developed or reinforced during the training should be aligned with the content of your supportive supervision. This may require some revision or realignment of your supervision checklists to ensure that these practices are included in the on-the-job skills and monitoring. Therefore, supervisors should be part of the initial training process or should be

oriented on what was included in the training to be sure that they have the ability to monitor the expected outcomes.

> Note on the mode of "supportive supervision"
>
> Given limitation in resources, "classical" supportive supervision is not always able to implemented as planned. If periodic on-the-job site visits (e.g. once/quarter, twice yearly, etc.) are not feasible, then other means of providing monitoring and feedback are possible and should be incorporated into work-plans. These include: regular telephone calls, email exchanges, discussions during review and other similar meetings, and/or cross-learning visits between health staff at the same level.

Each trainer should be available/accessible to follow-up with the trainees when they need additional mentoring or information, particularly when faced with a challenge in implementing what was learned in the training. This coaching could also come from a peer or manager who may not have been the original trainer but who has the same experience level and knowledge of the content that was covered in the training.

6.5.3. Refresher training

As part of the process evaluation of the training, some review (e.g. after one quarter, six months, etc) should be conducted on whether the trainees at all levels are adequately and appropriately implementing the practices/skills that were given in the training. For example, if trainees are not maintaining the expected outcomes from the training, if new staff have come into the system, and/or if the training did not achieve the objectives, then refresher training should be conducted. This should include revision and distribution of the training materials and accompanying tools or job aids to be sure that these are also available to the trainees as reference material. The refresher training can be adapted to the field situation, i.e. a one-day intensive training activity for poorer performing districts/facilities; focus on particular content that was not adequately covered or understood rather than the full curriculum of the original training; on-site mentoring as part of other supervision or review activities.

6.5.4. Tools and job aids

The materials that were used and distributed in the training should not only be available and referenced by the trainees during the training, but also used in their daily practice. These materials may also need to be reproduced for new staff and/or in areas where staff who were not part of the initial training would benefit from having these materials as references. For example, the training guide that was used for the new vaccine introduction; key fact sheets; question and answer guides; checklists on skills that are to be applied from the training or indicators that are to be measured; posters, sticker or leaflets that describe specific practices (e.g. reminder not to put open vial of preservative-free vaccine (e.g. PCV10) back in the refrigerator).

6.5.5. Trainee follow-up

Cascade training does not end when the last session is conducted or when the new vaccine is launched or the campaign finished. Therefore, the program should ensure that there is follow-up with the trainers and trainees on the outcomes and impact of the training. Trainees can be required to provide feedback on how they are applying the knowledge, skills and practices learned from the training (e.g. in quarterly report or during meetings). The motivation of trainers and trainees can be

maintained by acknowledging their work during supervision visits, newsletters, or other meetings. Distance learning or continuous professional development opportunities can also be used to further strengthen their skills and recognition. The skills, knowledge and practices (including reporting) from the training should also be incorporated into work-plans, future training (e.g. MLM), and system strengthening or quality of service initiatives (e.g. RED) for sustainability.

6.6. Evaluation

Content development can be done by needs assessment studies or based on if available reliable data. Supervising and coaching all stages of cascade steps are important. Evaluation of training includes monitoring which is conducted on an on-going basis, at every stage of the process, so that changes can be made as needed during the implementation or at the next step. An evaluation plan that can be integrated into process to serve as on-going feedback device for trainers and managers to measure changes in performance and quality of cascade training. It is have to be determined if the objectives of the training are met. Process evaluation should be done for all steps of training. If possible, an epidemiologist needs to look at the training and give evaluation rather than the EPI manager.

6.6.1. Steps in evaluation

1. Formative
2. Process (provides information about what occurs during training)
3. Outcome
4. Impact

The methods can be either: a- Qualitative (Interviews, Case studies, FGDs), b- Quantitative (Surveys)

6.6.2. Components of the training

1. Design
2. Development
3. Implementation
4. Analyse

The cascade approach has

1. Training
2. Implementation
3. Supervision
4. Data collection (feedback)
5. Analyse

Changes according to the result impact evaluation have to be made at all levels of cascade training.

6.6.3. Impact evaluation

1. Is meant to answer the question, “how did what was taught in the training affect the problem)
2. Tries to measure whether or not has affected the initial problem identified and epidemiological methods can be used such as Qualitative and quantitative

3. In other words, an impact evaluation is meant to assess the extent to which what was learned is making a difference at the community level, or targeted groups, or beneficiary of the intervention.

Evaluation of training success has been related to a number of factors such as

1. High quality training materials
2. Delivery of the cascade training by experts to extremely competent individuals
3. The excellent support and encouragement to the trainers from the project
4. The interactive type of sessions

6.6.4. Key factors to unsuccessful training sessions

1. Poor selection of participants
2. Inadequate methodology
3. Influence of external factors in the health and social environment

7. Key Characteristics

As a summary of the discussions and group works, the following key traits of successful actions on training were identified:

1. Performance indicators
2. Practical skills
3. Access to materials and tools all the time
4. Process evaluation at all levels
5. Simple content aided with visible tables
6. Blended training
7. Use of new technologies for trainings
8. Localisation
9. Reaching all level of health staff
10. Convincing donors and governments
11. Follow-up (refresher courses, mentoring and coaching etc.)
12. Peer review
13. Competency in adult learning
14. Skills and competency based training
15. Voluntary based trainers
16. Pilot testing and revise the trainings
17. Acknowledgment of efforts
18. Motivation
19. The need of dashboard

8. Recommendations and Way Forward

Meeting experts endorse the literature review methodology and results: it is often not the cascade training model which does not give optimal results, but the manner in which it is implemented. Classical cascade training strategy has to be improved and strengthened with additional strategies so that it can be used more effectively.

1. Meeting experts endorse that a cascade plus approach "a well-planned and implemented cascade training strategy with an understanding of holistic approach (pre-during-post) to the communicable disease control and immunization programs (not limited to immunization), practice oriented, flexible, done by using multiple learning techniques, blended learning, optimizing new technologies, supported with effective supervision, competency based monitoring, process evaluation and problem solving deliveries.
2. Members acknowledge that "cascade plus" enhance the traditional cascade approach and encourage countries and partners to adapt implement and evaluate it to country context. (Annex 1)
3. Members propose that cascade plus approach should be elaborated further within a performance improvement framework for HRH to provide concrete guidance and tools to country immunization managers on how to successfully implement training and ensure follow up sustainability.
4. Members suggest that cascade plus approach should be advocated discussed and presented in forums that include participation of EPI managers and regional and local partners, leading to country training plans being further developed in CMYP, annual plans etc. for ensuring sufficient funding improved provider performance
5. Members recognize that currently a lot of training is happening in countries due to new vaccines introductions however, it is often not systematic and well thought and does utilize the best training practices. PIE, EPI review and assessments reveal an inadequate health worker performance in critical area, in spite of health worker training.
6. Members advice that WHO and partners should advocate for inclusion of detailed training plans and evaluation methods as a pre-requisite in funding proposals particularly GAVI applications and incorporated into annual reporting mechanisms
7. Members acknowledge that adopting the cascade plus approach into the existing country training system may need extra resources and sufficient time.
8. Sustainability long term planning on-going capacity building strategy
9. Training is not equal to learning
10. WHO and partners continue to coordinate with country programs in supporting their capacity building efforts

Annex 1: "Cascade Plus Training" Approach

There is a consensus among authors that, although, some disadvantages and ineffective results have been observed, it is very clear that because of the advantages to planners in terms of cost and use of human and material resources, cascade training programs will remain a feature of organizations for some time to come. Yet, it is often not the cascade training model which does not give optimal results, but the manner in which it is implemented. It was clearly seen that if the cascade training strategy is well planned, carried out by blending appropriate teaching techniques such as distance learning, coaching-mentoring, interactive, skill oriented, problem based and on the job training, supported with audio-visual teaching methods and dramas and is well monitored/supervised during the implementation phase, it can be an effective strategy for training the health care staff and managers. In other words, the classical cascade training strategy has to be improved and strengthened with additional models so that it will be more effectively used. In order to differ this approach from the traditional cascade training, it is called as "cascade plus training strategy".

In short, "Cascade Plus Training" approach is a well-planned and implemented cascade training approach that utilizes a strategic and holistic integration of training into the health system. This systematic approach to competency-based learning considers pre-training, implementation, and post-training phases. It focuses on quality, flexible delivery, optimizing the use of new technologies through blended delivery and process evaluation.

Taking these points into consideration and depending on the arguments stated above, an example of "cascade plus training approach" is proposed in Table 2. As it is seen in the table, this approach covers all stages of training and the operations level. The training models and techniques should be selected or combined depending on the need and feasibility at the local level.

Table : Training / Learning techniques by levels of "cascade plus training approach"– Two level cascade training (*) (Z. Oztek)

Planning phase (Pre training phase)	Training of trainers (First level of cascade training)	Training of providers (Second level of cascade training)	Implementation phase (Post training phase)
Select trainees Develop material Decide method Find resources Organize facilities Train master trainers (Advanced training) ▪ Self-learning ▪ Blended learning	Blended training ▪ Face to face ▪ Interactive ▪ Problem based ▪ Entertainments/ Scenarios / dramas ▪ Distance / On line Workshops Peer learning Mentoring Learning by doing	▪ Blended training ▪ Face to face ▪ Interactive ▪ Problem based ▪ Entertainments/ Scenarios / dramas etc. ▪ Distance / On-line Workshops Peer learning Coaching and mentoring On the job training Refreshing training Travelling seminars Rotations Drip training Distance learning	Supportive supervision and competency assessment through ▪ site visits ▪ telephone calls ▪ records evaluation Coaching/ mentoring Refreshing training Travelling seminars Rotations Drip training Distance learning Providers' assessment and feedback Process evaluations

(*) Appropriate items will be selected and blended according to local conditions in each level.

Annex 2: Agenda

WORLD HEALTH ORGANIZATION
REGIONAL OFFICE FOR EUROPE

INTERNATIONAL
CHILDREN'S CENTER

EXPERT CONSULTATION ON TRAINING METHODOLOGIES

ANKARA, TURKEY, 19-20 NOVEMBER 2012

Agenda

Monday, 19 November

Chair: Prof Dr T. Turmen			
09:00	09:30	Opening address	ICC - WR
09:30	09:45	Objectives of the meeting	Ms J. Bahl
09:45	10:15	Ice breaker: Getting know each other	ICC
10:15	10:45	Coffee break	
10:45	11:05	Overview of the Literature review and interviews	Prof Dr Z. Oztek Dr
11:05	11:20	Discussion	
11:20	11:35	5 key messages from literature survey report	ICC / Dr. A. Koseli
11:35	12:45	Group work: Strategies for pre-training, during-training and post training for an effective training programme	All Participants
12:45	14:00	Lunch break	
Chair: Ms L. Shimp			
14:00	14:15	Feedback from group work: Pre-training strategies	
14:15	14:45	Discussion	
14:45	15:00	Feedback from group work: During-training strategies	
15:00	15:30	Discussion	
15:30	16:00	Coffee break	
16:00	16:15	Feedback from group work: Post training strategies	
16:15	16:45	Discussion	
16:45	17:00	Bringing it all together	All participants
17:00		Adjournment of the day	

Tuesday, 20 November

09:00	09:10	Introduction to group work : Applying the strategy to real country and content	Ms J. Bahl
09:10	10:10	Group work	
Chair: Ms N. Frankel			
10:10	10:25	Feedback from group work: pre training protocol	
10:25	10:40	Discussion	
10:40	11:00	Coffee break	
11:00	11:20	Feedback from group work: during training protocol	
11:20	11:45	Discussion	
11:45	12:05	Feedback from group work: post training protocol	
12:05	12:30	Discussion	
12:30	14:00	Lunch break	
Chair: Ms D. Leab			
14:00	14:20	Reflecting back on the protocol	
14:20	14:40	Guidance on conducting Pilot country evaluation	
14:40	15:00	Potential outputs of the study	
15:00	15:20	Next steps: who, what, by when	Ms J. Bahl
15:20	15:30	Closing remarks	ICC
15:30	16:00	Coffee break	
16:00		Adjournment of the day	

Annex 3: List of Participants

WORLD HEALTH ORGANIZATION
REGIONAL OFFICE FOR EUROPE

INTERNATIONAL
CHILDREN'S CENTER

EXPERT CONSULTATION ON TRAINING METHODOLOGIES

ANKARA, TURKEY, 19-20 NOVEMBER 2012

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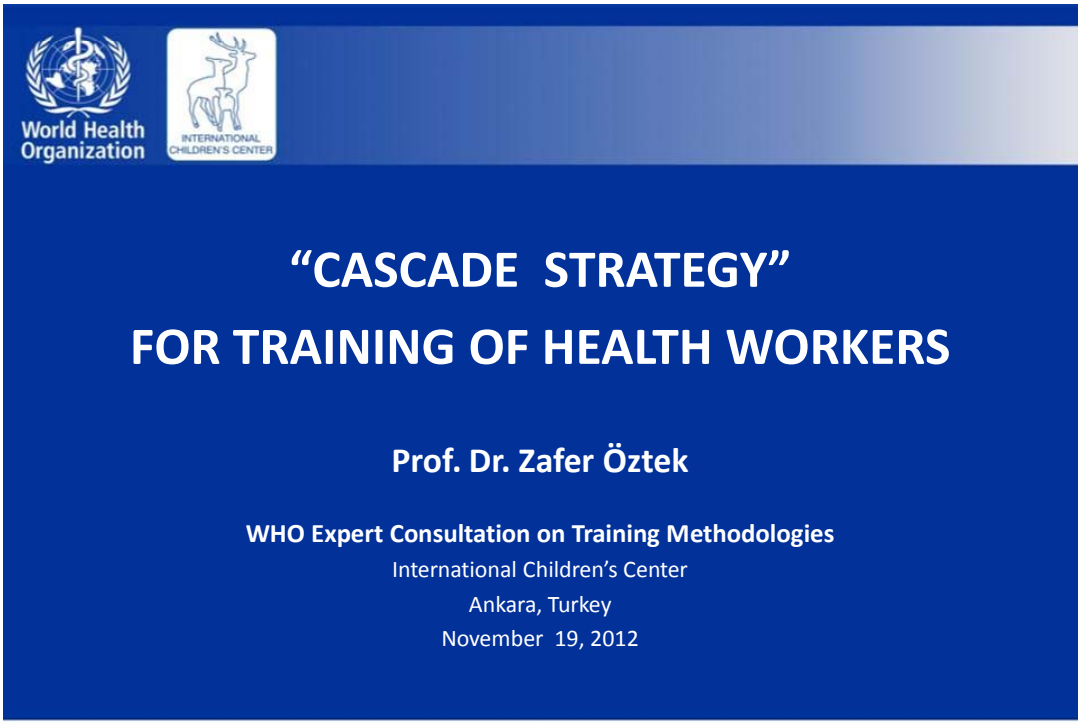
Annex 4: Presentation of "Cascade Strategy" for Training of Health Workers



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