

## **2<sup>ND</sup> Workshop of the International Collaboration on Advanced Vaccinology Training Summary of the meeting**

We looked at COVID and how it changed the world, followed by the global and LMIC perspectives of how COVID has changed immunization. This was followed by discussions around the biggest challenges for immunization.

The development and deployment of a COVID vaccine in less than a year is one of the great scientific achievements of our time. However, there was tremendous injustice and inequity in the sharing of vaccines. The gap between developed and developing countries and the access to protection has been shameful. Another key lesson of the pandemic is that science is not easy but getting the shots into the people was way more difficult. It reminded us that the single most important tool we have in public health and in vaccinology in particular, is the most basic – good communication. The magic ingredient that pulled everything together is trust. The pandemic also reminded us of the fragility of the public health infrastructure. COVID-19 was also the first pandemic of the social media age and that has been a significant factor. We witnessed a pandemic of misinformation from anti-vaccine propaganda to the promotion of dubious drugs and conspiracy theories.

We have to be firmly at the centre of conversations about health security because it helps unlock resources not constrained from health budgets. The most powerful actor for immunization is the Minister of Finance and we need to be more able to make arguments that are responsive to their language and metrics.

The COVID-19 crisis has given many opportunities such as telemedicine, the development of immunization registries, capitalizing on the private sector in the delivery of immunization, attracting huge financial resources to deal with health issues, exposing many existing challenges such as inequalities, social determinants of health, and the human resource challenge which may be the biggest one.

The following summarizes information and discussions from the various sessions.

### **Landscape analysis**

In preparation for the Workshop, a survey was implemented aiming to update the landscape analysis on advanced vaccinology training conducted in 2018 and provide insight into the impact of the COVID-19 crisis (submitted for publication in the journal *Vaccine*). Even though some courses were not sustained over time, the number of courses has been increasing, and at least one vaccinology course is now being offered in each WHO region. Although the training capacity has increased tremendously, the need still exceeds the capacity. The most frequent challenges reported included sustainable funding and identifying faculty. The COVID-19 pandemic impacted the delivery of several vaccinology courses which have been postponed or reformatted to an online or hybrid training event. The discussion also flagged some important elements of a course that help secure funds such as accreditation, demonstration of need and impact, and sustainability. A growing number of courses have post-course evaluations of impact of the course.

### **Supporting virtual training**

A guide “Adapting to virtual teaching and learning” was produced and a summary of the pros and cons of shifting to virtual training based on the experiences shared by courses, was circulated. Electronic tools offer an increasingly immense opportunity to provide a

virtual learning experience of great quality. There is a natural trend to increase e-courses which has enormously accelerated through the pandemic constraints, improving flexibility and accessibility of the courses for new audiences. The design and tailoring of e-learning courses needs to be done carefully taking into account the target audience, the duration of the course, technological tools and preparation. Virtualization of a face-to-face course is not the same as virtual courses by initial design. Real time virtual classes require stable and reliable internet on the day of the training. It was argued that one could not fully replace in-person courses. Loss of networking, an important aspect of advanced vaccinology courses, is certainly a challenge. Virtual training has also the challenge to be matched with the availability of people (time zones, etc.).

### **Needs assessment**

Although the COVID crisis and intervening priorities made it challenging to collect this information in preparation for the workshop, various organizations provided some insights on the needs of their constituents in terms of training.

It was clear that there is a real need for basic vaccine courses and we need to see how the Collaboration can support groups to make this happen. Gaps in training were identified such as emergency preparedness and there are a lot of gaps in organization of courses, infrastructure and content. To improve emergency preparedness, it is important to train: Decision-makers: Ministry of Health/ Department of Health; NITAGs/ RITAGs; Implementers: EPI managers, clinicians, epidemiologists, NGOs and communication experts. Most common NITAG trainings are related to conducting literature review, evidence-to-recommendation process, understanding modelling and strategies around addressing vaccine hesitancy and making sense of health economics data. There are different needs however, depending on the audience, especially NITAG secretariat versus NITAG chair and core members.

### **Course accreditation**

Accreditation criteria are important to create and maintain effective learning for professionals and maintain integrity between health professionals and industry. Accreditation can be secured both for face-to-face or virtual events. One could also request accreditation for webinars and or update/refreshers activities. A course needs to be accredited by one only accreditation institution. Even if there is no accreditation body in a country, accreditation could be secured from another accreditation institution. Courses which are members of the Collaboration offering short courses that are not yet accredited are strongly encouraged to start a process allowing for accreditation.

### **Course evaluations**

An evaluation handbook for courses had been developed ahead of the meeting. There are different levels and purposes of evaluation beginning with participant satisfaction and moving along the scale to impact on patient health. Clarity is required on what needs to be measured in the evaluation and then choose appropriate evaluation methods based on goals and objectives of the program. It is best if the evaluations are anonymous. The evaluation can be: Short-term: knowledge, competencies (a few weeks); Mid-term: Concrete behaviour changes and implementation of commitment to change can be assessed within 3-4 months; Intermediate: after six months, to ensure that the knowledge and competencies are still there and if not used will be used; and Long term: Impact of these behaviors.

The impact of a course can also be monitored by: Mentoring follow-up - interviews with learners; Self-assessment throughout year; Measurement of alumni network interactions/connectivity (platform, social media); Higher demand for training; Implementation of cascade or additional training activities by the participants.

Several courses conduct evaluations to measure the impact of the course and it was suggested that those who do not could go over these evaluations and adopt what might be beneficial for their programs.

### **Multicourse applicants**

A proportion of courses' candidates have already attended other advanced vaccinology courses. This poses challenges in the evaluation of the applications. Some of the interest in attending other courses may be due to attending a course with different emphasis (more specialized versus general, complementary trainings), need for a refresher course after some years, or interest in expanding the networking. Attending multiple courses that have similar typology (course design and contents) are likely not to have any incremental benefits. However, this may be different for students attending courses that build on the knowledge of the previous courses. It is therefore important to have clear and transparent selection criteria when assessing candidates to avoid overlapping/duplication and looking at cumulative experience. Looking at the differential impact of multiple training is very difficult, and one should actually look at the contribution of a course soon after it is held.

### **Cascade training**

Formal cascade training is complex and to do it seriously, one has to plan it, think about what is needed, and have the right resources to support it. Quality assurance and fidelity with respect to the original training materials are particularly challenging. One has to credit the original documents and look at what can be lost in the adaptation and downsizing or translation, what could be misinterpreted or misrepresented. Further, if materials are not properly adapted, they may not fit context, culture, and resources. Lectures and teaching material could also quickly become obsolete. Further, there may be a challenge with faculty if their material is made public and this could have legal implications. Moving to formal cascade training also implies a uniformity of the audience.

There was consensus that for advanced vaccinology courses engaging in formal cascade training was risky and that they should limit themselves to supporting the development of other courses/seeding courses and leave the organization of basic courses and mass training to others involved with it.

### **COVID impact and related remaining training needs**

Tremendous knowledge on SARS-CoV-COVID19 has been generated from observational and interventional studies and highlighted the need to emphasize some topics of interest in the vaccinology course (e.g. communication skills, behavioural and social sciences, vaccine access and vaccine hesitancy). The COVID-19 pandemic has revealed a new vaccine platform, its performance and its potential (i.e. m-RNA platform). Vaccine inequity has triggered a great effort from WHO to transfer the technology to LMICs as part of a global push to increase manufacturing of COVID-19 vaccines in LMICs for under-served nations, and more trainings programs are being put in place.

COVID has taught us that we need to change how we communicate on vaccine efficacy. Indeed, today almost all vaccines available for COVID have very similar efficacy or

effectiveness against severe disease or death but variable ones against symptomatic disease or infection and this concept needs to be emphasized as a major communication point. The other issue to be communicated is the concept of bridging studies which has never been so much in the forefront of ethical issues and now new vaccines have to go through bridging studies.

### **Refresher courses**

Alumni need refresher training activities to update, refresh and reinforce knowledge, provide an opportunity to network and share ideas. Refresher training should be focused on specific topics. Most alumni are open to attending an online vaccinology course for refresher training. It is critical that refreshers' opportunities are easy, not expensive, come in different formats, and we need funders who can make that happen. These can be webinars, recorded lectures, as well as short courses. It was suggested that alumni themselves be involved in leading some of these activities. It was also suggested that accreditation and certificates of participation be obtained/given to participants. Refresher activities organized for one course should be made available to alumni of other courses.

### **Facilitation of networking**

Alumni want networking; facilitation for exchange of knowledge and best practices are considered of value; workshops, seminars or conferences are preferred for networking; time constraints are certainly an issue; on-line meetings (virtual or hybrid) at least quarterly are desirable. Networking in advanced courses will improve courses and continuous-educational efforts. There is a unique opportunity for the networking-enrichment process and this should be included in the design of, and during courses. Tailor-made post-course activities should be designed and implemented. Knowledge could fade or change but networking will prevail! Networking virtually is easier if one has at least met once. Networking activities should not be general but topic-focused. It is the interest and value the person gives for investment in an activity that will drive the person to find the time or not. Participants liked the idea of incorporating networking into evaluation and of formally evaluating networks after courses.

### **Sharing of information and resources between courses**

A survey on the Sharing of information and resources between courses was implemented showing the need to have access to additional resources and the willingness to share presentations/case studies/other materials on the password protected area of the e-portal of the Collaboration. Feedback was also provided on what was considered as good practice and this was used for the development of the Code of Conduct on the sharing of information.

Over two-thirds of respondents were in favor of developing a discussion platform on the e-portal to include: experiences, challenges, gaps, best practices with course organization, and so on.

It was pointed out that a lot of issues on the sharing of documents are actually covered in Creative Commons. However, the Code of Conduct was essential as a simpler reference document. During the discussion, it was suggested that one could organize a webinar on copyright issues and how this relates to the Code of Conduct. Many expressed interest in attending such a webinar. There was a proposal to develop this webinar with a lawyer, someone well familiar with Creative Commons and with open online education to better understand how documents could best be shared including an understanding of Creative

Commons. It was also suggested that one could develop a standardized form to facilitate the sharing of resources.

Participants also proposed the potential development of a refresher course for the Collaboration. This would be for one or two days with a selection of a few lecturers from various courses in the name of the Collaboration and use as a Refresher Course. This would be a pragmatic implementation of sharing of resources and at the same time a useful refresher course for all courses' alumni. One could organize a poll of subjects that could be included in the refresher course. It could be organized virtually with regional poles of people meeting locally.

### **e-portal**

The aims of the e-portal established after the first global workshop were to: (1) provide a listing of existing advanced vaccinology training courses; (2) give more visibility to existing vaccinology training courses; and (3) allow for sharing of information between vaccinology training courses.

The e-portal was developed as a separate independent website, easy and cheap to maintain and develop. Currently 31 courses are listed in the search module and specific information on courses of interest can be accessed via web links. The hope is to list all courses of the Collaboration and to have the cross-referencing of the e-portal by members of the Collaboration systematized to give more visibility to the portal and members' sites. There is both a need for the development/strengthening of some of the courses' websites/pages and a need to further develop the portal, building on achievements and expectations from this workshop. Suggestions included the need to add attractive features and to restructure the e-portal with two sub-domains (intranet/internet) - one for people looking for vaccinology courses and other interested parties, and one for members of the Collaboration.

If new sections are developed on the portal, they will have to be sustained and it will therefore be important to count on all members of the Collaboration to provide news/information/updates. The discussion stressed also the need to keep monitoring and evaluating the e-portal.

To proceed optimally with the further development of the e-portal, an e-portal workstream will be established composed of Lizzelot Anderson, Erika Berghman, Clare Cutland, Philippe Duclos, Lisbeth Soederberg, and Naveen Thacker.

### **Formalization of the collaboration**

The discussion on the Collaboration highlighted the importance of getting it right as it will undermine the Collaboration in the future if not done properly. The results of a survey on the formalization of the Collaboration conducted in preparation for the workshop were presented. A large majority of the responders supported a more formalized Collaboration to facilitate the exchange of information and help them address issues of concern. Participants were then given a chance to review and discuss the key points from the draft charter that was circulated ahead of the workshop and built on the results of the above-mentioned survey. Participants agreed with the proposed charter and the formalization of the Collaboration with some requested adjustments, and the draft charter will be revised accordingly.

The Secretariat will be provided by ADVAC for an initial period of 3 years from this workshop with funding from the Bill & Melinda Gates Foundation.

As some courses may not be formally accredited yet, a grandfathering clause was agreed for the founding members of the Collaboration with the expectation that the courses would secure accreditation within a maximum of 5 years from the date of this Workshop. Membership of the Collaboration implies agreement with the Code of Conduct for the sharing of information.

The course as a whole (or groups of courses when several are organized by the same institution(s)) is/are a member of the Collaboration and all those in charge (to a limit of up to 3 persons per course leadership is set, and if courses are organized by two or more partners, it is the responsibility of the course leadership to determine who the representatives are) of the organization of the course are invited to participate in the Collaboration.

The charter will be reviewed by a lawyer before its finalization. The lawyer will also advise on the need to register the Collaboration or not.

### **Conclusion**

During the Workshop, we looked at a number of reports of surveys – we had our own data to understand the needs. The response rate to surveys was impressive. It is important to have these markers of local evidence which give an indication of how we need to go forward.

There were thoughtful comments shared on all presentations. There were lots of questions which opened the eyes of everyone in the room including the presenters. There was much sharing of experiences including best practices and we need to have more best practices brought forward.

The Collaboration has come a long way from the first meeting and we are way ahead of where we were from the previous meeting. It is important in the future to see that the Collaboration continues with educational sessions that help all of us enhance what we know and do not know.

The meeting enforced the view that there was real enthusiasm and commitment for the International Collaboration and its core values.