IPAC BULLETIN

December 2015

QUARTERLY UPDATE OF THE IMMUNIZATION PRACTICES ADVISORY COMMITEE

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A note from the Chair:

Dear IPAC members and observers,

Our October meeting feels like a seriously long time ago, but I do want to thank members and observers for being there, and Anna-Lea and Diana for leading us through a balanced and significant agenda. It will be important to continue to track the evolution of topics such as the quality and use of immunization data, improved modelling of vaccine wastage estimates, maternal and neonatal tetanus elimination, and the second year of life platform. That last item is echoed in the increasing calls for work on an 'adolescent platform' for immunization and other health interventions; strategies focused on particular points in the life-course are exactly the type of programmatic issue relevant to IPAC's work.

The report on the external evaluation of IPAC's past functioning and future potential has been finalised. While the evaluation found that "IPAC's advice to WHO and contributions to immunizations operational practices are widely viewed as successes", this process also suggested seven recommendations that are being actively considered. I'd love to hear your thoughts on one in particular: the question of what more should we do to improve IPAC communications and functions outside of our face-to-face meeting? Should we have more frequent teleconferences? Are these newsletters helpful? Are there other online modalities that might help?

One area where IPAC serves WHO is our ability to provide a practitioners' review of draft guidance documents. As well as email circulation, I think that the TechNet21 site offers some benefits: especially the ability to see a thread of each others' comments. Please do check in regularly to the IPAC group page on the website (see http://www.technet-21.org/en/network/groups/) and click on the Discussions tab, this provides a handy list of recent discussions, including documents for review. Over the past month we've been asked to provide comments on draft EPI Review Guidance and the Guidelines for Sustaining Maternal and Neonatal Tetanus Elimination – thanks to those members who have commented on these, including the consolidated feedback received from the JSI team.

Last month saw the end of service of Robert Steinglass and Shelley Deeks; as expressed in the October meeting, both so distinguished in their contributions through IPAC. And I'm pleased to again welcome our three new members: Amani Mustafa, David Brown and Ian Gemmill. Lastly, I would like to mark again the news of Michel Zaffran's appointment to Director, Polio Eradication from next February – sad for EPI, but definitely cause for congratulations. 2016 is shaping up as a major year for polio control and immunization in general.

As many of us head into a holiday season, with Christmas celebrations for some, I'd like to wish you peace and joy at this turning of the year.

Chris Morgan

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Inside this issue:

Remote Cold Chain Monitoring System: Vaccine Guard

Evaluation in Zimbabwe Central Vaccine Store - By Adelaide Eleanor Shearley

Persistent power shortages and lack of reliable electricity present a particular challenge to the implementation of the Zimbabwe Expanded Programme on Immunization (ZEPI). For this reason, the ZEPI places high priority on robust cold chain monitoring systems, as the programme continues to introduce more new and expensive vaccines. In October 2015 Electro Medical Technologies, a local representative of Dulas, specialized in manufacturing WHO prequalified solar direct drive refrigerators/freezers and remote temperature monitoring devices, in conjunction with the ZEPI National team, evaluated the Vaccine Guard at the Central Vaccine Stores.

Staff from Kenilworth Clinic in Bubi District, Matabeleland North *Photo: JSI R&T.*

The Vaccine Guard is a remote temperature monitoring device that helps EPI managers keep track of cold chain equipment at any site worldwide via web -accessible interface, thus producing reliable data for vaccination programmes.

The Vaccine Guard can be applied to any cold chain equipment including refrigerators/freezers without the need for man powered temperature checks. The minute there is a temperature problem it sends an alert via text or email which helps reduce losses incurred by temperature excursion such as refrigerator breakdowns.

In summary key features:

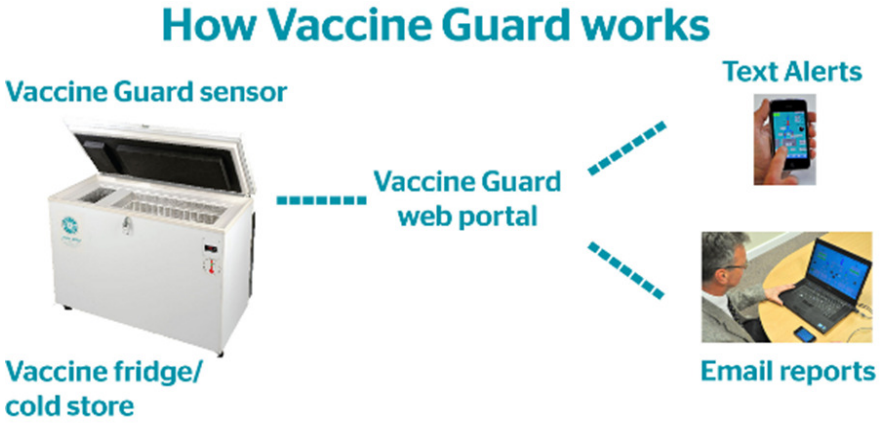
- Automatically measures and logs the temperature every 5 minutes;
- Instant alerts on power failures and temperature fluctuation limits sent directly to cold chain technicians or EPI manager via text or email;
- Can be installed in less than two hours;
- Easy battery replacement; and
- One web page manages all your refrigerators with results stored and accessible in real time web based reports.

Since the installation in October 2015, the device has given accurate temperature readings including periods of high temperature fluctuations due to loss of mains power and removal of the vaccines for transit. These incidents occurred at least twice during the evaluation which can be viewed on the web portal at: www.vaccine-guard.com. The MOHCC and WHO National logisticians have the login and password details.

Tracking the temperatures 24hrs a day, 7 days a week, Vaccine Guard is ideal for refrigerators, freezers, cold boxes and cold stores and can be useful, for a start, to monitor the National, Provincial and District Vaccine Stores. If the temperatures go beyond pre-set limits an email or SMS message is sent immediately to let the Technicians know, especially during weekends and public holidays.

The EPI team is happy with the performance of the Vaccine Guard and are currently waiting for a report on the evaluation, hopefully by January 2016. Given the current challenges of persistent power cuts in Zimbabwe, resulting in erratic electricity availability, the Vaccine Guard becomes a necessary option to revolutionise the cold chain temperature monitoring system to ensure that vaccines are always kept at the right temperatures 24hrs a day and 7 days a week.

Providing immediate feedback on the performance of equipment and linking this to a map of all the locations, makes keeping an eye on all cold chain much easier. The system also allows managers to directly monitor the status of their entire cold chain in real time from their desks. It can even be useful for post-marketing surveillance, providing funders and equipment manufacturers the opportunity to view the equipment they provide and to see it performing correctly.



References

1. www.vaccine-guard.com.
2. MOH, Zimbabwe cold chain inventory report 2009 to 2011
3. PATH, WHO. Direct-drive solar vaccine refrigerators-a new choice for vaccine storage. Seattle: PATH, WHO; 2013.
4. MOH, Zimbabwe EVMA report, 2012

IPAC Grows to a new total of 15 members

Among the varied changes affecting IPAC this year has also been the decision to increase its membership from twelve to fifteen. Consequently, three new distinguished members were selected in late September, as was announced at the IPAC meeting the following month and again in the Chair's opening remarks to this issue of the IPAC Bulletin.

While Amani, David, and Ian brought the Committee to a full house, the November departures of Robert and Shelley mean a new recruitment effort is to be launched this month. A Call-for-Nominations will be shared with you shortly and we would appreciate your help in getting the word out.

From the Working Group frontlines

Craig Burgess:
An MNTE briefing

In 1989, the WHO called for global elimination of Neonatal Tetanus (NT) by 1995. Maternal tetanus was added when the goal was relaunched in 1999; focusing on 59 countries where tetanus was a significant public health problem. Despite impressive reduction in tetanus related mortality and morbidity neither of the original goals was met.

The goals of tetanus prevention are to i) eliminate MNT in all remaining priority countries and ii) prevent tetanus in all age groups by achieving and sustaining high coverage of 3 childhood doses of TT containing vaccines (DTP/penta) and appropriate booster doses. Despite huge efforts by Ministries of Health and partners, 21 of the 59 priority countries are still yet to eliminate MNT and 90% of neonatal tetanus cases go unreported.

A SAGE MNT working group has therefore recently been convened to put MNTE and tetanus prevention i) on a short and long term footing and ii) place equitable vaccine protection in the context of protection for life.

Photo: UNICEF/China/2012/T.Billhardt

The group will report back to SAGE in 2016. The group's terms of reference include to review reasons why elimination target dates have been missed, identify key challenges to achieving and sustaining MNTE, identify tetanus risks faced by older age groups, integrate TT containing vaccines into antenatal care and other health delivery platforms, review experiences and critical success factors of countries with no or limited campaigns. The work could also help raise the profile of:

Integration: with ante- and post- natal care and school based delivery mechanisms (links with HPV, typhoid and Influenza);

Choosing between delivery mechanisms: routine infant immunization; TT campaigns in 'High Risk' areas; school-based and health facility-based delivery mechanisms;

Innovation: delivery of TT using Uniject, overcoming geographic, health systems, human resources, cultural and socio-economic barriers to deliver TT containing vaccines to reach hard-to-reach populations and primary school aged girls and boys;

Advocacy: with Governments (for domestic funding, political will and leadership) and International funding partners (for global financing opportunities) to secure funding needed to achieve and maintain MNTE and support elimination of tetanus risk;

Surveillance: strengthening NT surveillance.

Ian Gemmill:
Highlights of the Meeting of the Global Advisory Committee on Vaccine Safety (GACVS)

I am pleased to have been asked to be the IPAC liaison representative to the Global Advisory Committee on Vaccine Safety (GACVS). GACVS held its most recent meeting on the 2nd & 3rd of December at WHO Headquarters in Geneva, chaired by its new chair, Dr Robert Pless (Canada).

GACVS celebrated recently its 15th anniversary, and to commemorate that event, a paper documenting the accomplishments of GACVS has been submitted for publication. This paper also identified the challenges posed by ever-increasing sources of data and the wide range of new vaccines that are used or are to be released globally. To address this evolving situation, GACVS is reviewing its methodologies for making decisions, based on the best evidence. It also is active in promoting best practices for risk assessment for vaccines, advises on risk communications and maintaining public trust in vaccines, and does advocacy to address the gaps in vaccine safety capacity globally.

The meeting had 5 major topics:

- The safety of RTS,S, a vaccine for the prevention of malaria. This vaccine has the promise of reducing disease and deaths caused by malaria, especially in the under 5 age group,

GACVS update cont'd

if four doses can be administered. There have been some adverse events following immunisation (AEFI), such as febrile seizures without sequelae, and potential signals for meningitis and cerebral malaria. Since these AEFI need to be monitored, SAGE has recommended that RTS,S be implemented in a stepwise fashion, with careful evaluation at each stage.

- The safety of HPV vaccine has been called into question in several different countries. GACVS was provided with yet more evidence that these vaccines are extraordinarily safe, and in particular, do not cause autoimmune disease. With over 200 million doses administered, and no serious safety signal identified aside from a small increased risk of GBS in one study conducted in France that had not been seen to date, GACVS decided to make an unequivocally strong statement on its exemplary safety record.
- Narcolepsy associated with a European adjuvanted influenza A: H1N1 during the pandemic of 2009. GACVS was provided with the further evidence from well-designed research that there is a small but real risk of narcolepsy in genetically predisposed children and adolescents associated with the receipt of this vaccine. This AEFI was first identified in Finland, where over 75% of children and youth received this vaccine. While the incidence is very low, it has led to debilitating sequelae in the third of persons with this condition who have not recovered fully.
- Mass anxiety reactions following Immunisation: GACVS was apprised of several episodes of mass hysteria following immunisation in a variety of settings, over time, and in a number of different countries. The most important concerns are the detrimental effect that such events, misunderstood by the public, have on public confidence in vaccine programmes, and the misuse of medical resources when patients with hysterical reactions are misdiagnosed with other conditions and admitted to hospitals for extended periods of time. It is critically important that such events be recognised and diplomatically addressed to avoid such consequences.
- Smallpox vaccine: the various types of smallpox vaccines that are available globally, along with their pros and cons were presented. This vaccine is now used exclusively to protect military and other responders to bioterrorism and biological warfare.

Additional new generation vaccines are being considered to expand emergency stockpiles and GACVS noted the limited data regarding use in children and pregnant women.

Staff of WHO also reported on various episodes of error in administration of vaccines that led to serious consequences for some vaccine recipients. These events provide lessons for programmes everywhere, such as ensuring that vaccine packaging and labelling is easy to understand and to use, and that fridges for vaccines are not used for the storage of drugs or other products that may be confused with vaccines, leading to preventable errors. As well, there was a discussion of signals generated by the WHO's Program for International Drug Monitoring based in Uppsala and how best to strengthen their vaccine safety work.

VPPAG Highlights - by Debbie Kristensen

The **Vaccine Presentation and Packaging Advisory Group's** (VPPAG's) new **Delivery Technologies Working Group,** led by Birgitte Giersing of WHO and Darin Zehrung of PATH, is off to a strong and productive start. The group's terms of reference and 2016 work plan have been finalized. Initial activities include providing feedback on a Preferred Product Characteristics (PPC) document for Measles and Rubella vaccines in a Microarray Patch (MR/MAP) format, providing feedback on a vaccine technology prioritization framework being advanced by PATH, reviewing alternative primary container designs, and continuing to advance previous VPPAG analyses on the pros and cons of bundling multi-component (e.g., lyophilized vaccine and diluent) products. The group has already helped to improve the MR/MAP PPC in preparation for the WHO MAP Product Development Workshop held in Geneva in early December 2015 (*see summary on page 5*.)

The VPPAG **Bar Code Working Group**, led by Kaleb Brownlow of Gavi and Rich Hollander of Pfizer, continues to serve as means to coordinate the efforts of various stakeholders to improve inventory management at country level. The group has aligned around GS1 standards, created technical guidance to assist vaccine manufacturers with bar code implementation for the secondary and tertiary packaging levels for vaccines with agreed upon data content, and shared lessons learned in pilot projects and bar code implementation in several countries. Future activities under discussion include clarifying the business case for bar code implementation, defining the roadmap for the future movement of bar codes from a WHO Programmatic Suitability 'preferred characteristic' to a 'critical characteristic' for secondary and tertiary packaging, and defining the roadmap for eventual inclusion of bar codes on primary packaging.

In October, the VPPAG hosted a panel discussion at the Developing Country Vaccine Manufacturers Network meeting in Bangkok to discuss emerging vaccine presentation and packaging issues and to encourage vaccine manufacturers to engage as appropriate in relevant VPPAG working groups. The panel included Dr. Suresh Jadhav of Serum Institute of India, Dr. V.K. Srinivas of Bharat Biotech, and Fernando Lobos of Sinergium Biotech. Dmitri Davydov of UNICEF Programme Division and Debbie Kristensen from PATH co-chaired the panel session.

Hot off the Press:

Report of the Immunization and Vaccines related Implementation Research (IVIR), Advisory Committee Meeting, Geneva, 9-11 June 2015 (WHO/IVB/15.09)

http://apps.who.int/iris/bitstream/10665/201699/1/

Other immunization news:

WHO Microneedle Patch Product Development Workshop

As mentioned by Debbie on page 4, IVB is engaging in the evaluation of a potentially game-changing vaccine delivery technology called a microarray patch (MAP).

On the 8-9th December, WHO convened MAP developers, vaccine manufacturers, regulators, funders and other key stakeholders to discuss the current technology status and product development pathways for this novel delivery technology.

The objective of the meeting was to align working assumptions with respect to preferred product characteristics for MAPs and the vaccines for which this delivery system could be most impactful, define the regulatory requirements for clinical testing and approval and the data that we need at each stage, and to understand the economic drivers and barriers to achieve future and sustained investment in this emerging technology.

There are very encouraging preclinical data for a number of vaccines on MAPs, and review of the first clinical data suggests that this technology could offer significant global public health benefits, with particular utility in both low and middle income countries.

A document describing the development considerations for vaccine delivery by MAPs will be published in early 2016.

Upcoming Meetings / Events:

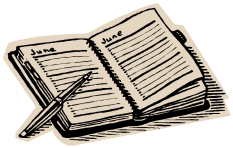
⇒ January 12-14, 2016: Geneva, Switzerland – **1st Face-To-Face meeting of the SAGE Working Group on MNTE and Broader Tetanus Control**

⇒ January 25-29, 2016: Chamonix, France – **WHO/ UNICEF Immunization Supply Chain Hub Retreat**

⇒ February 9-10, 2016: Geneva, Switzerland – **WHO Technical Expert Consultation: Alternate Dosing Schedules of Pneumococcal Conjugate Vaccine(s)**

⇒ February 10-11, 2016: Geneva, Switzerland – **Meeting of the SAGE Working Group on Dengue Vaccines**

⇒ February 24-25, 2016: Addis Ababa, Ethiopia - **Ministerial Conference on Immunization in Africa**



A final word from the IPAC Secretariat

This is has been a busy year, marked with much change for our Committee. Thank you for your patience as we've endured the growing pains and we look forward to a new year that is all the richer and more productive for IPAC.

In the meantime, may you have a peaceful and serene end to 2015, while enjoying a happy and healthy start to the new year.

The IPAC Secretariat Team