

Next-Generation Vaccine Delivery Technology Meeting

Royal Manotel

41 rue de Lausanne, Geneva, Switzerland

18th – 19th February 2014

Meeting objectives:

- Review lessons learned of earlier experiences with new vaccine technologies and generate a landscape of existing and future technologies, including delivery devices, packaging, and vaccine formulation.
- Provide a vision for the future of vaccine delivery technologies with short-term (within the Decade of Vaccines timeline) and long-term objectives (beyond 2020).
- Arrive at a consensus on the types of vaccine delivery products and technologies needed for immunization programmes in 10 to 20 years from now.
- Provide recommendations and strategic direction to incentivize industry investments in the development of some of the major technologies.

Meeting Agenda (draft 10 Feb 2014)

Tuesday, 18th February 2014

<i>Time</i>	<i>Topic</i>	<i>Facilitator/ Speaker</i>
9:00 – 9:30	Welcome - Introductions Meeting Objectives	Michel Zaffran Carsten Mantel
9:30 – 10:00	The Promise of New Vaccine Delivery Technologies	Darin Zehrung
10:00 – 11:00	<p><u>Plenary Session 1: Panel Discussion on Lessons Learned</u></p> <p>Five-minute presentation on each example (telling the story) with ensuing discussion on lessons learned:</p> <ul style="list-style-type: none"> ○ What worked, what did not? ○ Why was it more complicated than anticipated? ○ Could errors have been avoided? <p>Examples:</p> <ul style="list-style-type: none"> • Autodisable syringes (Peter Evans) • Jet injectors (Darin Zehrung, PATH) • Uniject (Debbie Kristensen, PATH) • Vaccine vial monitor (Debbie Kristensen, PATH) • Aerosols (Suresh Jadhav, SII) 	Moderator: Michael Free
11:00 – 11:30	Coffee Break	
11:30 – 12:30	<u>Plenary Session 1: continued</u>	
12:30 – 13:30	Lunch Break	
13:30 – 15:00	<p><u>Plenary Session 2: Landscape</u></p> <p>Five-minute summary presentations of technologies with ensuing ten-minute plenary discussion on strengths, weaknesses, opportunities, and challenges:</p> <p>a) Delivery Devices</p> <ul style="list-style-type: none"> • Intradermal devices (Darin Zehrung, PATH) • Patches, microneedle devices (Hiro Okayasu, WHO GPEI) • Dry powder inhalation (Robert Sievers, U Colorado) • Mucosal delivery (David Lewis, U Surrey) • Electroporation (Eric Sandstöm, Karolinska Institute) 	Moderator: Darin Zehrung

	b) Packaging Technologies <ul style="list-style-type: none"> • Primary container design (Courtney Jarrahan, PATH) • Integrated reconstitution devices (Gene Saxon, PATH) c) Formulation <ul style="list-style-type: none"> • Freeze- stable vaccines (Debbie Kristensen, PATH) • End to end analysis of the value proposition for increasing the thermostability of vaccines (Eleanor Edson, BMGF) 	
15:00 – 15:30	Coffee Break	
15:30 – 17:00	<u>Plenary Session 2: continued</u>	
17:00 – 17:15	<u>Workshop Teasers</u>	Workshop Facilitators
17:30 – 19:00	<u>Marketplace</u> Individual presentations of delivery technologies – with optional poster discussions	Academia Industry Developers
19:00 – 20:00	Cocktail Reception	

Wednesday, 19th February 2014

<i>Time</i>	<i>Topic</i>	<i>Facilitator / Speaker</i>
8:30 – 9:00	Review of deliberations of Day 1	Carsten Mantel
9:00 – 11:30	<u>Workshop sessions: Potential Opportunities</u> 1. Delivery Devices (Darin Zehrung; Courtney Jarrahan) 2. Packaging Technologies (Debbie Kristensen; Simona Zipursky) 3. Formulation (Martin Friede; Anna-Lea Kahn) Discussion of short- and long-term opportunities for next-generation technologies for both routine immunization (EPI+ vaccines) as well as for accelerated disease control (e.g. polio, measles, influenza). Review of <ul style="list-style-type: none"> ○ Challenges and opportunities 	Facilitators: Darin Zehrung Debbie Kristensen Martin Friede Rapporteurs: Courtney Jarrahan Simona Zipursky Anna-Lea Kahn

	<ul style="list-style-type: none"> ○ Minimum requirements (e.g. TPPs) ○ Operational issues 	
in between	Coffee Break	
11:30 – 12:30	<u>Plenary Session 3: Regulatory Pathways/Licensure</u> Discussion of regulatory aspects of delivery technologies alone and in combination with vaccines, including aspects of WHO prequalification, programmatic suitability and generic product profiles (Arnoud Akkermans, Netherlands; Anita Bitegeko, Tanzania; Ilonze Chinyere, Nigeria; Maria Fernanda Reis e Silva Thees, Brazil)	Facilitators: Nora Dellepiane Adriana Velazquez
12:30 – 13:30	Lunch Break	
13:30 – 14:30	<u>Plenary Session 4: Workshop Feedback</u> Rapporteur feedback from workshops 10-minute presentation plus 10-minute discussion	Moderator: Michael Free Courtney Jarrahian Simona Zipursky Anna-Lea Kahn
14:30 – 15:30	<u>Panel Discussion:</u> <ul style="list-style-type: none"> • What does the global immunization community consider needed, feasible, affordable, acceptable? • Pros and cons of different technologies. • What is the best way forward, what are suggested areas of future work both in the short and long-term? 	Panel: WHO, UNICEF, BMGF, Academia, Regulators
15:30 – 16:00	Coffee Break	
16:00 – 16:30	<u>Plenary Session 5:</u> Conclusions, Opportunities, Next Steps	Darin Zehring J-M Okwo-Bele