Concept Note for Side Meeting at PMAC 2018

Meeting title The Global Virome Project: the Beginning of the End of the Pandemic Era

Organizers

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Duration

We propose two half-day sessions during the following times.

- Closed session: Half-day session 1, Monday 29 January 2018, 9.00-12.30
- Invited launch: Half-day session 2, Monday 29 January 2018, 14.00-17.30

Background

We live in an era when the threats posed by global pandemics are greater than at any other point in human history. We live in fear of a previously-unknown pathogen suddenly emerging and sweeping through every household, through every community, irrespective of borders, or of its hosts' social and economic standing. This fear alone can cost billions, as we saw in the global panic that followed the SARS and H1N1 influenza virus outbreaks. It is not unfounded, as evidenced by the 35-year HIV/AIDS epidemic that has cost over 35 million lives.

Despite the potential impact of viral threats, the world remains unable to predict when, where, or from what species the next emerging virus will break out. Global trends indicate that over the course of this century, new microbial threats will continue to emerge at an accelerating rate, driven by the world's expanding population, growing interconnectedness, and increasing interactions with animal populations (1). The majority of these threats originate in a seemingly endless pool of viruses carried by our relatives in the Animal Kingdom (2). Modern science has been able to characterize some of these viruses and trace their roots to their mammalian origins – for example, HIV-1 that spilled over from chimpanzees to people and Ebolavirus carried by bats in Africa (3). However, recent estimates put the total number of these animal viruses that could threaten us at more than 1.5 million, spanning 24 viral families (4). Compared to the 260+ viruses currently known from humans (5), this viral "dark matter" represents 99.9% of the potential pandemic threat. It means that, for every known strain of the SARS virus there are likely thousands of unknown "SARS-like" viruses (6) circulating in wildlife that could emerge in the future.

The Global Virome Project (GVP) was conceived in response to the challenge posed by the repeated and unpredictable emergence of high impact viral epidemics. These outbreaks compromise global health security and the well-being of the people of the world (1). The recently launched Coalition for Epidemic Preparedness Innovations (CEPI) represents a critical step to address known but long-neglected viral threats, such as MERS-CoV, Lassa Fever, and Nipah Virus (7). This vital work addresses long-known but underfunded viral threats; however, a tremendous challenge remains: how do we best prepare for unknown future threats?

The GVP's goal is to characterizing the vast pool of unknown viral threats in wildlife, their natural hosts. Knowing what viruses are available and able to infect humans and their epidemiological circumstances will allow us to prepare for viruses before they jump into people. It will transform our culture from one that responds to outbreaks to one that predicts and prevents future pandemics. It will also better prepare us to prevent accidental or intentional release of laboratory-enhanced virus variants. With broad support for the GVP, the world will be better prepared to deal with the consequences of escalating spillover of deadly viruses, likely in just ten years. The initiative will generate an unprecedented atlas of viral diversity, build global surveillance and laboratory capacity in the most high-risk areas, catalyze technological advances in diagnostics and vaccines, and establish a global framework for triaging and neutralizing novel viral outbreaks before they spread between humans.

The project is now at a critical point of gaining increasing support from new partners and collaborators, starting pilot projects in several countries, and ready for its official global launch. We believe that GVP's concept and goal aligns perfectly with the subtheme for PMAC 2018 - Making the World Safe from the Threats of Emerging Infectious Diseases and would very much appreciate the opportunity to officially launch the initiative in the ideal setting. In short, the GVP is designed to herald in the beginning of the end of the Pandemic Era, and PMAC 2018 will be the optimal stage for launching this next 'big science' project.

Objectives

Our primary objective is to have two half-day side meetings at PMAC in order to bring scientists together and officially launch the Global Virome Project. Our specific objectives are as follows:

- First, in a closed session, assemble members of the Global Virome Project Steering Committee and Working Groups and provide a platform to discuss specific critical points, including but not limited to in-country operations, laboratory testing, data sharing and ethical and legal topics.
- Second, in an open session, officially launch the initiative by introducing the concept, objectives, approach and anticipated outcomes of the Global Virome Project to PMAC attendees.
- Share information with project members and PMAC attendees on pilot projects in first-wave countries that are ready for operation, or are in the final planning stage (Thailand, China, Costa Rica etc.).
- Foster collaboration between GVP members and country officials who are interested in participating in the project in the future.

Proposed meeting format

- Half-day session 1
  We propose a roundtable conference for the closed session. Presentations will be made by the core working group members on the progress of GVP since its last meeting in Beijing, China in February 2017. Working groups will spilt up into smaller discussions (in the same single room) to address specific challenges and improve the operational flow of the overall project.

- Half-day session 2
  The open session will consist of presentations and moderated panels. This format will allow for the official launch with presentations by the core members to introduce the progress of GVP, and to have discussions to further identify, discuss and address challenges that GVP will likely face and overcome as the project launches.

Expected output/outcome

Through two half-day meetings, we anticipate the following outcomes.

- Strengthened collaborations between Steering Committee members and Working Group members and an improved operational infrastructure for launch of GVP activities.
- Enhanced interest from countries who are willing to participate in this global initiative, and communication between country officials and GVP members.
- Defined short-term, mid-term and long term goals for GVP to track its development since the last international planning meeting in Beijing in February 2017 and onward.
- An internal report of the proceedings of the closed session meeting for information sharing within the GVP and core PMAC group.
- A report outlining proceedings of the open launch session. This piece has been drafted, and will be published and publicly available in form of a manuscript.
- New media content (photographs, discussions and other news) to be shared with the public through PMAC and GVP outreach activities.

Target and estimated number of participants

- Half-day session 1
  Approximately 40 participants are expected to attend this side meeting. This session will be closed to invited members only. The targeted audience will be members of the Steering Committee and Working Groups of the Global Virome Project who have been instrumental in launching the project, as well as honored PMAC organizers.

- Half-day session 2
  Approximately 100 participants are expected to attend this side meeting. This meeting will be open to PMAC participants. The targeted audience will be relevant authorities in the international organizations, governments, academia and non-governmental organizations.

Room set up

- Half-day session 1: Roundtable style
- Half-day session 2: Theater style

Meeting agenda

- Closed session: Half-day session 1, Monday 29 January 2018, 9.00-12.30

Time	Agenda	Details
8.30-9.00	Registration	
Part 1	**Opening and Introduction**	
9.00 – 9.15	Welcome and Opening	
9.15 – 9.30	Meeting overview – introduction of participants and objectives	
Part 2	**Updates from teams**	
9.30 – 9.50	Progress on structure and implementation	Core committee
9.50 – 10.20	Governance updates	Ethical, Legal and Social Implications Working Group (WG) Governance, Advisory, Partnerships WG
10.10 - 10.40	Science and Technology updates	Lab Platform WG Modeling and Risk Analytics WG Metadata Platform WG Behavioral Risk WG
10.40 – 11.00	Coffee break	
11.00 – 11.30	Implementation updates	General Management & Partner Engagement WG Data Management WG Field Operations and Surveillance WG Lab & Biosafety Implementation WG
11.00 - 12.00	Discussion	
Part 3	**Summary and closing**	
12.10 – 12.30	Summary remarks	

- Invited launch: Half-day session 2, Monday 29 January 2018, 14.00-17.30

Time	Agenda
13.30-14.00	Registration
Part 1	**Opening and Introduction**
14.00 – 14.15	Welcome and Opening
14.15 – 14.30	Meeting overview – introduction of participants and objectives
14.30 – 15.00	Background and rationale
15.00 – 15.20	Call to Action
15.20 - 15.40	Coffee break
Part 2	**GVP countries and partners**
15.40 – 16.00	Country plans and commitments (country #1)
16.00 – 16.20	Country plans and commitments (country #2)
16.20 – 17.00	Collaborator plans and commitments
Part 3	**Summary and closing**
17.00 – 17.30	Summary remarks

References

1. Jones KE, Patel NG, Levy MA, Storeygard A, Balk D, Gittleman JL, et al. Global trends in emerging infectious diseases. Nature. 2008;451:990-3.
2. Prediction and prevention of the next pandemic zoonosis, (2012).
3. Leroy EM, Kumulungui B, Pourrut X, Rouquet P, Hassanin A, Yaba P, et al. Fruit bats as reservoirs of Ebola virus. Nature. 2005;438:575-6.
4. Carroll DD, Peter; Wolfe, Nathan D.; Gao, George F.; Morel, Carlos; Morzaria, Subhash; Tomori, Oyewale; Mazet, Jonna A.K. The Global Virome Project. Science (in review). 2017.
5. Olival KJ, Hosseini PR, Zambrana-Torrelio C, Ross N, Bogich TL, Daszak P. Host and viral traits predict zoonotic spillover from mammals. Nature. 2017.
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7. Brende B, Farrar J, Gashumba D, Moedas C, Mundel T, Shiozaki Y, et al. CEPI—a new global R&D organisation for epidemic preparedness and response. The Lancet. 2017;389:233-5.