Summary of CEPI Scientific Advisory Committee (SAC) meeting

Teleconference, 09.03.2020

Committee members

Present

- Alash´le Abimiku
- Connie Schmaljohn
- Daniel Brasseur
- Delese Mimi Darko
- Helen Rees (Chair)
- Inger Damon
- James Robinson (Vice chair)
- John Edmunds
- Michel De Wilde
- Myron Levin
- Paula Bryant
- Peter Smith
- Phil Krause
- Ralf Clemens
- Stanley Plotkin

Non-voting members

- Ali Alloueche

CEPI Secretariat

- Richard Hatchett (CEO)
- Melanie Saville (Director of Vaccine R&D)
- Nick Jackson (Head of Programmes and Innovative Technology, Vaccine R&D)
- Mike Whelan (Programme Manager, Vaccine R&D)
- Nicole Lurie (Strategic Advisor to the CEO)
- Raimonda Viburiene (Scientific Officer, Vaccine R&D)
- Stig Tollefsen (Head of Strategic Science, Vaccine R&D)
- Valentina Bernasconi (Scientist, Preclinical and Immunology, Vaccine R&D)
- Celine Gurry (Scientific Officer, Biological Standards, Vaccine R&D)
- Paul Kristiansen (Head of Biological Standards and Assays)
- William Dowling (Non-Clinical Development Lead)

Invitees

- Ana-Maria Henao Restrepo (AR)

Meeting minutes

Please note, information provided within this meeting summary is correct as of 9 March 2020. The status of CEPI's vaccine portfolio may change as programmes progress.

Welcome

Helen Rees and Melanie Saville opened the meeting. Helen Rees congratulated CEPI with all the efforts put in motion this far in the response to COVID-19 and Melanie Saville thanked for the support from SAC and their contribution to the work.

General update on various CEPI approaches to COVID-19

Melanie Saville gave an update on the work conducted by CEPI this far in the response to COVID-19.

At the last meeting, SAC had endorsed CEPI to fund 4 COVID-19 vaccine candidates up and through Phase I. Additionally, SAC endorsed the recommendation to launch a Call for Proposals to expand the COVID-19 portfolio.

Since the last meeting:

- CEPI's 4 initial investments are in preclinical stages.
- CEPI's Call for Proposals for "Proven vaccine technologies, applicable for large scale manufacturing, for rapid response against novel coronavirus, 2019-nCoV" launched
- The SAC has been informed and involved in the Calls for Proposals review process. The SAC has also been involved in *ad hoc* Epidemiology and disease enhancement subgroups alongside *ad hoc* calls with the SAC Chair.
- The call resulted in down selection to 4-6 awardees, now entering due diligence.
- Overall, CEPI aims to support 8-10 developers through Phase I. It is likely that approximately 6 will go through Phase II/III, and up to 3 candidates could be scaled up to go through large-scale manufacturing. The probability of success and risks will be assessed through the development phase.
- Activities of Clinical Trial working group:
    - WHO is developing a master clinical protocol. CEPI is initiating an internal group to look at a broad range of issues around clinical trial design and execution to help support the vaccine developers.
- As appropriate, some of the preclinical studies will be run in parallel with Phase I studies.

COVID-19 project portfolio update

Nick Jackson presented the COVID-19 project portfolio update. He gave an update on progress of CEPI's current vaccine candidates, describing the selection process for additional scalable vaccine candidates for COVID-19 from the Call for Proposals. A group of SAC members, other external reviewers and internal CEPI reviewers reviewed the applications. In summary, 48 applications were received. Of these,19 were eligible for review from which 4 were shortlisted for full funding subject to due diligence. An additional candidate was chosen for bridging funding until funded by others and a final candidate funded in preclinical to de-risk the project.

- The main criteria for selection were speed, scale of manufacturing and access.
- With the additional candidates entering the portfolio, this gives the opportunity to have a manufacturing footprint in US, EU and Asia.
- Dependent on successful development of the candidates, the portfolio could offer hundreds of millions of doses in the next 12 to 18 months timeframe.

There was a discussion regarding the target of spike antigen for the vaccines.

- A recent paper stated that there had evolved two different strains of the SARS-CoV2 virus.
- The content of the paper is disputed, and SAC experts stated that there is only one variant currently.

There was a discussion for the possibility of developing intranasal distribution of vaccines as this could simplify distribution and need and access to syringes.

- One project, The University of Hong Kong is to be administered intranasally.
- CEPI raised the point that several projects proposing intranasal still was at an early stage in the development. The call was explicitly for proven and licensed technologies with possibility for large scale up. In concurrence with this, the peer-reviewers suggested to stay with intramuscular routes of administration.
- Adjuvants for intranasal distribution would also be an unexplored terrain and add complexity. Previously adjuvants administered intranasally have been associated with safety concerns.
- Alternative delivery is on CEPI's radar including ID for fractional dosing, but this will not be evaluated in Phase I.

Nick Jackson explained CEPI's 'matchmaking' process of bringing developers with vaccine development experience in contact with large scale manufacturing organisations. This could be highlyrewarding through combining into consortiums for both development and production.

It was noted that several SARS and MERS experienced groups applied to CEPI's Call for Proposals:

- The University of Hong Kong working with SARS.
- The University of Oxford working with MERS.
- Novavax working with SARS.

Enabling Science project updates

Paul Kristensen gave an update on CEPI's Enabling Science projects. William Dowling provided an overview on viral stocks, reagents, assays, and cross-reactivity studies.

The SAC was informed of preclinical development and progress in securing testing capacity for CEPI's developers. CEPI's main focus regarding standards and assays and the main points for CEPI investments was also presented. Points mentioned:

- CSRIRO- implementing partnership agreement signed; further implementing agreements sought
- Secure capacity for vaccine developers for vaccine testing.
- Coordinating the work with others; not to duplicate studies and share available data.
- Secure panel of serum; aiming to have a large volume collection for standardisation of assays.

Ana Maria Henao Restrepo thanked CEPI for great work and contribution and urged for continued efforts of collaboration to avoid duplication.

Update on WHO work groups

Ana Maria Henao Restrepo gave a brief update from WHO.

- A number of iterations are in progress on the principals of clinical trials strategy.
- WHO suggest a wide number of candidates for testing.
- WHO is developing a TPP for vaccines.
- Cross reactivity group is now being redirected to work on assays.

Priorities:

- To identify more than one preclinical model (for enhanced and inflammatory diseases and for different routes of infection to be able to address vaccine efficacy)
- Ensure standardisation and availability of reagents

Clinical trials:

- WHO will develop a strategy and mitigate any risk with Phase I in a lack of preclinical models.
- WHO will develop a model for enhanced disease.
- WHO are working on validating the different candidates.
- The draft Clinical Protocol is being discussed. CEPI will facilitate collaboration, and other groups will join discussions on its development.
- There is a strong urgency to work together.

AOB/Adjourn

Due to time constraints, Helen Rees proposed another call to continue discussions. Melanie Saville thanked attendees for the meeting and for all the input given for the activities to move forward.