Summary of CEPI Scientific Advisory Committee (SAC) meeting

Teleconference, 12-13 July 2021

Attendees

SAC members
Alash'le Abimiku
Sani Aliyu
Vineeta Bal
Alan Barrett
Luciana Borio
Paula Bryant
Inger Damon
Michel De Wilde
Peter Dull
George Gao
Azra Ghani
Josie Golding
Rebecca Grais
Ken J. Ishii
Kent Kester
Michael King
Philip Krause
Marc Lipsitch
Dominique Maugeais
V. Krishna Mohan
Vasee Moorthy (WHO observer)
Gary Nabel
Laura A. Palomares
Peter Paradiso
Stanley Plotkin
Frances Priddy
Mahmudur Rahman
Rino Rappuoli
Helen Rees
Marco Safadi
Peter G. Smith
Stephen J. Thomas
Linfa Wang
Michael Watson

SAC members - Apologies
Christian Drosten

CEPI – Presenters
Richard Hatchett
Melanie Saville
Stephen Mayhew
In-Kyu Yoon
Tim Endy
Nick Jackson
Paul Kristiansen
Gabrielle Breugelmans

CEPI – Observers/Support
Ingrid Kromann
Jakob Cramer
Debra Yeskey
Rob Morrison
Kristine Rose
Roice Fulton
Mark Polhemus
Carolyn Clark
Mario Jendrossek
Mihika Kelkar
Luz Hermida
Amol Chaudhari
Maïna L'Azou Jackson
Marc Salzone

CEPI – Apologies
Frederik Kristensen
Adam Hacker
Nicole Lurie

Meeting Overview

The CEPI Scientific Advisory Committee (SAC) was renewed following its meeting on 26 January. The renewed panel is comprised of 35 scientific experts spanning a broad range of disciplines highly relevant to CEPI's 2.0 Strategy. The SAC Terms of Reference is available here.

The 12-13 July SAC meeting was the first meeting of the renewed advisory panel. The first day included an overview of SAC past and future engagements, CEPI's mission, organization, portfolio of candidate vaccines and enabling sciences activities, and the CEPI 2.0 Strategy. The second day included deep dives into three topics of key importance in CEPI 2.0: mRNA vaccine platforms, CEPI's approach to preparing for Disease X, and the role of enabling sciences including standards, assays, models, and epidemiology.

Meeting Summary

Key takeaways

Day 1

- The incoming SAC will be expected to contribute in several ways as CEPI 2.0 evolves.
    - Support areas include vaccine portfolio adjustments; enhancing/supporting enabling sciences workstreams; defining strategy and investment in new R&D areas; scientific response to outbreaks; and mid- and after-action reviews.
- Varying perspectives were raised by SAC members on CEPI's 2.0 scope and ambition, but there is universal enthusiasm for helping refine CEPI's plans going forward.
    - Strong interest was expressed in supporting portfolio review; requests to involve SAC in review of CEPI's priority pathogens evaluation methodology.
    - Approaches e.g. competitive landscaping techniques were suggested to help characterize CEPI's unique/catalytic role in vaccine/countermeasures support given limited resources.
- The SAC chairs underscored lessons of COVID-19 pandemic and future focus areas for CEPI.
    - Focus areas included criticality of supply chain; capacity of centralized labs; assay development; broad manufacturing capacity and manufacturing innovations supporting large-scale production; early response to variants; rapid global evaluation of Ph3 trials; and renewed focus on mitigating risks of vaccine inequity.
    - Members discussed challenges around adoption of international standards and defining correlates of protection; regulatory considerations; and diagnostics.
- 100 days: Members discussed key factors influencing the ~300-day timeline to a SARS-CoV-2 vaccine and implications for achieving the 100-day goal.
    - Considerations must include appropriate targets, platforms, clinical & mfg pathways, applying benefit/risk assessments in pathogen evaluation and focusing on safety as well as efficacy/immunogenicity.
    - Consider response to pathogens with significantly different epidemiology than past outbreak pathogens e.g. SARS-CoV-2 and Ebola.
    - Members suggested that LMIC difficulties in securing equitable access and manufacturing capacity during COVID should be considered in the approach to the 100-day ambition.

- A key question was presented by Richard to the SAC for ongoing consideration: *what conditions and systems must be in place throughout the vaccine development ecosystem to enable the 100-day ambition?*

Day 2

- mRNA: Members discussed where and why mRNA has succeeded/stumbled and where questions yet remain – and whether/how the COVID experience has addressed those questions.
    - Members stressed that the relative importance of mRNA is strongly intertwined with practical considerations such as manufacturing capacity.
    - Opinions varied on benefits of mRNA to LMICs (for example, mRNA enables distributed manufacturing, but other characteristics e.g. cost/stability/local expertise and capacity are less auspicious).
    - General agreement that mRNA is a good platform for 100-day proof of concept due to speed and flexibility – however, members cautioned about "different populations, different vaccines, different safety signals." Consider how past outbreaks such as Zika drove a more nuanced discussion of vaccine tech and pregnancy/other vulnerable populations.
    - Much room remains for innovation e.g. biologic adjuvants, delivery, manufacturing optimization and scaling, antigen design. However, IP considerations were understood to be a significant challenge. A key role may exist for CEPI in generating/supporting IP/technology to incentivize others to collaborate.
- Disease X:
    - Members underscored the need to clarify the 100 day ambition's start- and endpoints – varying definitions have been shared of both trigger and target (e.g. EUA vs deployment to site).
    - Members encouraged broad consideration and utilization where appropriate of extant regional early warning systems and surveillance networks, specifying key partners including WHO and focus regions including Africa, Middle East and China.
    - Members expressed general support of the proposed viral family vaccine libraries approach while recognizing that more refinement of the approach is needed as e.g. mRNA platform data matures. SAC encouraged harmonization with similar efforts such as those by NIAID and VRC; some suggested to explore technologies e.g. AI to drive target selection.
- Enabling Sciences:
    - SAC members endorsed a broad remit for CEPI enabling sciences as laid out in the presentations. However, positions varied on the balance of direct support versus partnerships due in part to the broader questions of CEPI scope; prioritization of internal resources toward key enablers e.g. epidemiology and standards/assays was suggested by some.
    - Regional early warning systems, human capacity strengthening, genomic sequencing surveillance, and clinical networks were suggested as focus areas; both providing "inter-epidemic" support to these efforts, as well as leveraging e.g. existing clinical trial networks, was underscored as essential to efficiency and sustainability of investments.