Report to the Board
19 March 2020

SUBJECT:	**GAVI'S ENGAGEMENT ON COVID-19**
Agenda item:	04
Category:	For Information

Section A: Executive Summary

Context

- Gavi has been closely monitoring the outbreak of COVID-19 since it was first reported. The purpose of this paper is to provide an update on the pandemic and highlight the magnitude of risk and potential implications for Gavi-supported countries and Alliance operations. Based on this assessment, it provides an approach to engaging with Gavi countries on preparedness and gives a view to the critical questions related to vaccine development, access and delivery for Gavi to consider.

Key areas this paper addresses

- What is currently known about the global burden and impact of COVID-19 and the potential risks to Gavi-supported countries?
- What is the current vaccine pipeline and product development landscape?
- What are the potential risks to ongoing vaccine programmes in Gavi-supported countries and what is the proposed response?
- How should Gavi engage in areas related to COVID-19 vaccine development, access and delivery?
- What plans are in place to manage and mitigate the risks to the Gavi Secretariat's work in areas such as operations, governance and ensuring current portfolio vaccine supply and implementation of Gavi programmes?

Conclusions

- The Board is asked to provide guidance on approaches to manage and mitigate the impact of the COVID-19 pandemic on the work of the Alliance and, given Gavi's mandate for equity and access, to provide further input as Gavi defines its future role in COVID-19 vaccine development, access and delivery.

Section B: COVID-19 update and strategic implications for Gavi

1. Introduction

1.1 Given the rapid spread of COVID-19 it is timely to bring discussion to the Board at its 19 March 2020 teleconference. This pre-read provides an update on the pandemic and is intended to provide context to inform the discussion and describe how the Alliance may want to prepare for a range of future scenarios, while remaining focused on Gavi's core mission and comparative advantage. Given the magnitude of the risk and potential implications to Gavi supported countries and Alliance operations it provides a view to the critical questions related to vaccine development, access and delivery for Gavi to consider. This discussion is also timely as the Secretariat had already planned to update the Board at its June meeting on broader global efforts regarding vaccines for emerging epidemic diseases in the context of CEPI's (Coalition for Epidemic Preparedness Innovations) ongoing update of its strategy. It is important to note that this is a preliminary situational analysis by the Secretariat, produced on an accelerated timeline. It draws on the many efforts of Alliance partners on COVID-19 preparedness and response and close engagement with partners within the Alliance model on this topic will be essential going forward. It is important to note that support for additional COVID-19 activities is incremental to current programmes and thus contingent on a full replenishment scenario.

2. Background: Update on COVID-19

2.1 *Global context*

2.2 As has been widely reported, a cluster of cases of severe, atypical viral pneumonia, was identified in Wuhan, Hubei province, China in December 2019 thanks to a surveillance system set up in the aftermath of SARS (severe acute respiratory syndrome). It was eventually attributed to a new coronavirus caused by the severe acute respiratory syndrome coronavirus 2, SARS-CoV-2, which causes COVID-19 disease. On the advice of an International Health Regulations (IHR) Emergency Committee, the WHO Director-General declared a Public Health Emergency of International Concern (PHEIC) on 30 January 2020.

2.3 As of 12 March 2020, there have been 124,518 cases and 4,607 deaths reported in 118 countries or territories, including 25 Gavi-supported countries (217 confirmed cases), although such reported numbers very likely understate the scale of the COVID-19 outbreak given global limitations in case identification and confirmation capacity. Despite concerted efforts to prevent transmission multiple countries have reported early exponential spread. In addition to the direct mortality and morbidity associated with COVID-19 there has been significant and growing impact on global financial markets; disruption to communities, trade and travel; and impacts on access to healthcare. To date the majority of cases and deaths have been in higher income countries. While we do not know if there will be similar scale of transmission in lower income settings, given the severity of the global

situation it is reasonable to plan for a range of possible scenarios, including long-term widespread global transmission.

2.4 In such a global transmission scenario, the impact could go well beyond direct mortality and morbidity. This could lead to a reduction in the size of the health workforce and major disruption to global supply chains, jeopardising the provision of primary health care, including immunisation, and specialist care in all settings. In settings with limited resources, where health systems already face many competing demands (such as outbreaks of other infectious diseases) COVID-19 would add to the challenges of addressing population health needs. Several studies looking at both countries' vulnerability to introduction of COVID-19, and economic vulnerabilities if there is a protracted outbreak, have described the potential risk and impact in different Gavi-supported countries.[1] Gender is also an important consideration: although men appear to be at greater risk of dying, there is an emerging consensus on the multiple and disproportionate impacts on women related to the outbreak and response.[2]

2.5 *Disease burden*

2.6 While our current understanding of COVID-19 reflects surveillance capacity, availability of diagnostics and early epidemiology, the amount of data and research generated in this outbreak is unprecedented. Globally, COVID-19 surveillance and diagnostic capacity has scaled up quickly, although the rate of that scale up has varied across countries and the current lack of serologic tests means that we are unable to identify historic cases. To date, epidemiological reports show significant differences in disease risk and outcomes, particularly by age group. Risk of dying is greatest in the elderly, particularly those with a chronic condition. Compared with the general population, HCWs (health care workers) of all ages are also at increased risk potentially due to multiple exposure events in the absence of adequate infection prevention and control measures. While there is some indication that children and young adults are at similar risk of infection, children seem to be at very low risk for death or other severe outcomes.[3] Initial reports on outcomes in pregnancy are reassuring, although more information is needed. As more is understood about the relative risk of severe disease and the role and duration of natural immunity, new information will inform future vaccine use case scenarios, including targeting of vaccines, e.g. to HCWs and older adults.

2.7 Although understanding of COVID-19 is rapidly evolving and major gaps remain, it is already apparent that given the lack of existing population immunity it can spread quickly in the absence of control measures. Non-pharmaceutical interventions such as quarantine, isolation, social distancing and careful hygiene have been shown to be effective in containing or slowing its spread when rigorously applied. However, given

[1] https://set.odi.org/wp-content/uploads/2020/02/Economic-Vulnerability.pdf; https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30411-6/fulltext.
[2] https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30526-2/fulltext
[3] https://www.medrxiv.org/content/10.1101/2020.03.03.20028423v1

the challenges in sustaining such efforts, these interventions are unlikely to be sufficient to stop transmission of the virus everywhere. Furthermore, continued global transmission of the COVID-19 virus anywhere would place the areas that have contained the virus through non-pharmaceutical interventions at risk for importation and spread of the virus as soon as they relax those measures. As a result, it is critical that safe and effective vaccines be developed and deployed to provide a more effective and less costly alternative to non-pharmaceutical interventions for protecting populations against COVID-19.

2.8 *Vaccine pipeline and landscape*

2.9 WHO, through the R&D Blueprint, is actively monitoring the vaccine pipeline and investments in vaccine candidates have been made by CEPI, national funders and manufacturers.[4] WHO is also working towards eventual prioritisation of vaccine candidates for clinical trials, considering several factors: need for diverse vaccine approaches; existing knowledge on each platform technology being utilised; potential speed of manufacturing and scale-up of each candidate (which will influence the ability for large-scale use and contribution to long-term public health goals).[5] To date, speed of vaccine development is unprecedented. In the best-case scenario, licensed vaccine may be available in 18-24 months. There are also other approaches which could enable expanded use of investigational vaccines as part of a public health response either under a clinical trial protocol or an Emergency Use Listing Procedure (EUL).

2.10 Beyond vaccines, work is underway, coordinated through the WHO R&D Blueprint, to develop new diagnostics and therapeutics, and to screen existing compounds for therapeutic activity.[6] The World Bank is also supporting a multi-stream COVID-19 Fast Track Facility which is intended to address the threat posed by COVID-19 and strengthen national systems for public health preparedness with an initial focus on those countries with the most urgent needs based on their risk and capacity profiles.

3. Implications for ongoing programmes in country and Gavi response

3.1 The spread of COVID-19 has the potential to overwhelm health systems and disrupt routine immunisation services especially in Gavi-supported countries, which are low resource settings. This could potentially lead to significant drops in immunisation coverage, increasing the risk of vaccine preventable diseases with high mortality (e.g. diphtheria and measles). If

[4] As of 4 March, WHO reports 35 vaccines in development https://www.who.int/blueprint/priority-diseases/key-action/novel-coronavirus-landscape-ncov.pdf?ua=1. CEPI has identified ~ 80 potential vaccine candidates from their landscaping efforts (personal communication, CEPI).
[5] https://www.who.int/blueprint/priority-diseases/key-action/prioritization-candidate-vaccines-ncov2019.pdf?ua=1
[6] These efforts are also being coordinated through the WHO R&D Blueprint which convened 300 experts and scientists in February 2020 to develop a research agenda and research roadmap, which will identify timely priorities for both product, including vaccines, and non-product research. The roadmap is available here: https://www.who.int/blueprint/priority-diseases/key-action/Roadmap-version-FINAL-for-WEB.pdf?ua=1

the impact of COVID-19 proves to be severe in Gavi-eligible countries, there is likely to be a heightened level of risk to front line workers, possible disruption to supply chains and diversion of capacity and resources in the Ministries of Health. Should systems become overwhelmed there may be the need to resort to vaccine delivery through campaigns, which would entail an increase in risk tolerance.

3.2 In this context, Gavi is willing to provide financial support to countries for efforts to prepare for and respond to COVID-19 outbreaks. Gavi's Fragility, Emergencies, Refugees (FER) Policy provides a basis to extend flexibilities in the case of an emergency. Given Gavi's core mandate, the primary objective is to help mitigate the risk and impact of the COVID-19 outbreak on routine immunisation. However, Gavi is also willing to contribute to the broader response on an interim basis, where funding is not immediately available from other donors. Up to 10% of health systems strengthening (HSS) funding could be repurposed, subject to prior approval from the Secretariat and alignment with WHO guidance on COVID-19 preparedness and response and National Preparedness and Response Plans. Such reprogramming of HSS will divert some resources from support to core routine immunisation strengthening. To help mitigate this, all requests should outline the potential negative effects and mitigating actions. Given a number of partners are also offering funding for preparedness and response activities (including the World Bank, WHO, UNICEF, the Bill & Melinda Gates Foundation, Global Fund), there will be heightened coordination with other funders to ensure complementarity of support and timely decision-making.

3.3 If Gavi-supported countries begin to experience significant outbreaks, Gavi will consider additional support both to respond to the outbreak and to restore and catch-up routine immunisation services, in line with the full suite of flexibilities available through the FER Policy. However, since Gavi is projected to fully expend the current Board-approved HSS envelope, the Board would need to approve incremental funding to finance these flexibilities. The requirements could be significant if a large number of countries are impacted over time. Consistent with the spirit of the policy, flexibilities would not be automatically granted to all countries but based on an assessment of country context and relevance of requested activities to mitigate risks to routine immunisation. A process will be put in place for rapid engagement with Alliance partners and decision-making.

3.4 As more is known about the impact of COVID-19 in Gavi-supported countries, the Secretariat will provide regular updates to the Board. Rapid cross-learning will be essential and the Secretariat anticipates that the overall approach will need to be refined over time.

4. Gavi's role in vaccine development, access and delivery

4.1 As outlined above, there is a promising and growing early-stage pipeline of COVID-19 vaccine candidates based on diverse vaccine approaches and platform technologies. The goal of rapid availability of licensed vaccine in

2021 will depend on coordination and critical resource gaps being addressed. For example, further funding will be required to develop these candidates so they are ready for late stage clinical trials; CEPI estimates that up to US$ 2 billion will be required and has begun fundraising efforts.[7] As vaccines are licensed there will be challenges related to scale-up of manufacturing, access and equitable allocation, and timely delivery of new vaccines, which Gavi is well positioned to address. The World Bank has convened a number of task forces focused on addressing financing, manufacturing and scientific challenges related to future vaccine availability in which the Gavi Secretariat and other partners are participating.

4.2 The following section outlines future needs that have been identified at different steps of the vaccine value chain in order to ensure that new vaccines are globally accessible. This assessment is guided by Gavi's organisational mandate for equity and facilitating access to vaccines to those most in need. It draws from the Alliance's deep experience in addressing global vaccine access challenges through innovative vaccine financing approaches and support for emergency stockpiles for outbreak response. It will be critical to ensure Gavi's engagement is timely and impactful toward facilitating vaccine availability for developing countries. Initial approaches to key issues are framed for guidance from the Board, with the intention to come back to the Board with further analysis and specific recommendations based on working closely with Alliance partners.

4.3 The preliminary assessment below is structured along four areas of the vaccine value chain: **early stage development** required to ensure a broad portfolio of vaccine candidates; **funding for Phase III clinical trials** required to generate efficacy data required for licensure and policy recommendation; **investments in manufacturing** required to ensure access to adequate vaccines volumes are produced; and **support to vaccine delivery** in the context of outbreak response.

4.4 *Early stage development*

4.5 There is an urgent need to accelerate early stage development of COVID-19 vaccine candidates. Given the typical rate of attrition along the vaccine development pathway a broad and diverse portfolio of candidates is needed to increase the likelihood that more candidates will advance to late stage development (and ultimately licensure). In addition, multiple vaccines and diversified supply can also contribute to both earlier access to licensed vaccine and increased supply security. As vaccine candidates progress it will be important to have visibility to the likely development pathway for different candidates and the data and regulatory requirements at different stages. For example, there may be trade-offs between using established platforms with existing safety profiles or new approaches which would require more stringent regulatory review but could allow for potential earlier access to vaccines and more rapid scale up.

4.6 Currently some funders have redeployed resources to enable work to begin

[7] https://cepi.net/news_cepi/2-billion-required-to-develop-a-vaccine-against-the-covid-19-virus/

rapidly. However, a substantial increase in funding will be needed to maintain progress at pace. Given that timely response is likely to yield greater public health benefit, there is value in a mechanism that can help accelerate the availability of financing while new funding pledges are secured. One option would be to use an existing mechanism such as IFFIm to achieve this, as this would likely be significantly more rapid than establishing a new bespoke mechanism. This would require additional donor commitments to IFFIm, as IFFIm's current funding capacity is expected to be utilised for current Gavi programmes.

4.7 IFFIm uses long-term pledges from donor governments to issue "vaccine bonds" in the capital markets, frontloading large volumes of funds for Gavi programmes. This unique financial mechanism enables donors' pledges to go to work immediately, saving more lives, faster. In 2014 Gavi was able to quickly respond to the Ebola crisis thanks in part to IFFIm's ability to provide funding at scale. It gave Gavi the latitude to make a previously unbudgeted commitment of up to US$ 300 million to support a broad Ebola response, including procuring millions of doses of a safe and effective vaccine.

4.8 Recently, IFFIm has been successfully used for CEPI, where through an arrangement between Gavi, IFFIm and Norway, Gavi and IFFIm facilitated the acceleration of funding support from Norway to CEPI. In addition to funding early stage development, IFFIm could also be deployed to smoothen donor funding requirements if Gavi decides to incentivise or fund later-stage development or the scale-up of production of successful candidates. Recent arrangements between IFFIm and the World Bank – expected to be formalised soon – are anticipated to further improve IFFIm's efficiency. As a result, IFFIm will have an ability to fully utilise new pledges denominated in donors' currencies as well as have an increased capacity to frontload, from 58% to ~ 70% of the value of pledges. Whereas currently, for a US$ 100 million pledge paid over 10 years, IFFIm can disburse ~US$ 52 million on year 1 (vs. US$ 10 million of donor payments received), this could potentially increase to ~US$ 63 million, a ~21% increase in upfront proceeds.

Approach: *Gavi should explore ways in which it can contribute to the timely availability of funds for accelerated vaccine development, in particular through leveraging IFFIm to frontload funding for COVID-19 vaccine development.*

4.9 *Phase 3 clinical trials*

4.10 Phase 3 studies are a critical step in demonstrating vaccine efficacy and generating key evidence required for regulatory approval and policy recommendation. However (and as previously discussed in the context of the 2014 Ebola outbreak) there is no dedicated mechanism or entity with a mandate to fund Phase 3 trials in lower resource settings in general or specifically in the context of epidemic response. As one example, CEPI's mandate is focused on vaccine development for epidemic preparedness but is limited to the end of Phase 2 studies. Although CEPI could additionally support Phase 3 trials for COVID-19 vaccines it would need to mobilise new

financing and estimates that progressing these vaccine candidates through Phase 2/3 would require clinical development costs of up to US$ 150 million each including clinical trial material costs. While this is a critical funding gap and a potential barrier to bringing advanced candidates to licensure, it is a not a traditional area for Gavi's engagement and it would require significant investment in new capacity and expertise strengthening within the Secretariat.

Approach: *Given Gavi's mandate and comparative advantage, the Secretariat would not actively explore Gavi funding of Phase 3 trials but will continue to monitor vaccine development and report back should significant gaps be identified which impede vaccine development progress.*

4.11 *Supply and timely access to adequate volumes*

4.12 Looking ahead to potential vaccine use, given the speed and extent of COVID-19 transmission to date, it is likely that vaccine demand will be global. This is unlike many of the outbreak vaccines that Gavi currently supports, including Ebola, where global vaccine demand is comparatively limited since the disease has only emerged in a subset of countries. This raises questions on how to ensure timely access to sufficient volumes of vaccine for developing countries in the immediate and longer-term.

4.13 Access provisions can be informed by intellectual property, product characteristics, manufacturing capacity and ease of technology transfer. It will therefore be important to ensure that the appropriate agreements are put in place, licensed vaccines are suitable for use in low and middle income country settings, there is sufficient manufacturing capacity to ensure adequate supply, technology transfer approaches are simple and that access can be determined based on public health need rather than ability to pay.

4.14 Pandemic influenza vaccine may serve as a useful case study. Here there has been substantial infrastructure built up over the past 70 years: significant manufacturing capacity and expertise in large-scale production; established regulatory processes for accelerated licensure; a global health architecture including mechanisms for disease surveillance and sample sharing. To facilitate access to vaccine for developing countries, WHO has secured agreements with manufacturers to donate a percentage of doses in real time or grant royalty-free licenses. However, despite these steps, there are still significant access challenges. An analysis conducted by the Secretariat, in close consultation with WHO, for the Board in November 2018 highlighted that even in an optimistic influenza pandemic scenario, it is likely that there would only be enough supply available to the poorest countries to vaccinate the smallest high priority group before the pandemic peak. A supplemental intervention was explored in which Gavi could finance the reservation of further production capacity beyond that secured through the WHO's Pandemic Influenza Preparedness framework, but was discounted given considerations of costs and risks, including limitations with current manufacturing processes.

4.15 The pandemic influenza case highlights the importance of thinking early about access and manufacturing issues with a view to ensuring vaccines are considered global public goods. It will be critical to establish appropriate mechanisms to ensure global access to COVID-19 vaccines and avoid a scenario where middle- and high-income countries receive the majority of doses – for example through pre-contracting of volumes in advance of licensure, seizure or requisitioning of doses produced domestically or leveraging greater planning and financial capacity to secure vaccines – leaving insufficient volumes and/or lack of timely delivery for those most in need.

4.16 It is important that COVID-19 access discussions take place in parallel with clinical development. While some candidates with public sector financing may have access, provisions built in and parameters established for manufacturing scale-up, this may not be the case for other candidates. Developing country needs should be an integral part of the access policy dialogue. This would also need to include establishment of regulatory processes, including in developing countries, to facilitate accelerated or rolling approvals.

***Approach**: The Alliance should play an active role with key stakeholders on issues relating to availability and access to vaccine for Gavi-supported countries.*

4.17 Beyond engaging in policy dialogue and seeking to influence access provisions, Gavi could engage financially to directly secure manufacturing capacity or doses, building on existing models which use financial commitments to secure access. For example, as with the Advance Market Commitment (AMC) for PCV and the Advance Purchase Commitment (APC) for Ebola, Gavi's access to volumes can be facilitated by upfront commitments to purchase doses once available. Given the exceptional circumstances and potential need, new approaches could also be considered such as direct funding to manufacturers either through Gavi or an Alliance partner, to support scale-up of production specifically for supply to developing countries. This would likely provide the most secure access to sufficient volumes.

4.18 This is only a preliminary view to potential approaches and a deeper assessment by the Secretariat and Alliance partners of specific options, trade-offs, implications and risks would be required. Gavi's engagement in this space would also need to take into consideration broader market dynamics such as impacts of COVID-19 vaccine manufacturing on capacity for production of other Gavi-supported vaccines.

***Approach:** The Alliance should further explore the relevance of existing (e.g. stockpile funding, AMC, APC) or new tools and see how they could be applicable to COVID-19 vaccines to assure adequate doses for Gavi countries.*

4.19 *Vaccine delivery*

4.20 Supporting delivery of licensed COVID-19 vaccines as they become available would be fully within Gavi's mandate. Given that lack of national capacity to receive and deliver vaccines could be a major barrier to impact, it is critical to ensure that systems are in place to enable timely receipt and delivery in Gavi-supported countries as licensed vaccines become available. As described in the November 2018 Pandemic Influenza Preparedness briefing to the Board, the 2009 influenza pandemic highlighted the challenges for countries of receiving and delivering doses that had been donated to WHO during the pandemic.[8]

4.21 For effective delivery of COVID-19 vaccine, it will be important to consider tailored approaches in order to ensure systems and capacity are in place to achieve public health goals, particularly once Target Product Profiles and indicative vaccination strategies have been defined. Priority areas could include establishing regulatory processes, policy requirements for immunisation, identifying and addressing any gaps in information for targeting use of the vaccine, optimal approaches for reaching priority target populations (e.g. HCWs [9], adults at increased risk due to age or comorbidities), training and capacity building (including gender considerations) and integration with broader outbreak response. It will also be important to ensure that liability and indemnity issues are addressed.

***Approach**: The Secretariat and Alliance partners should continue to monitor information on disease epidemiology and potential use of vaccines to plan for potential future vaccine delivery, in particular leveraging the expertise of Alliance technical partners.*

***Question for Board guidance**: To what extent is the Board comfortable with the proposed approaches outlined in this document?*

Section C: Efforts to manage and mitigate the impact of COVID-19 on Alliance and Secretariat operations

5. Vaccine shipment

5.1 One area which the Alliance is closely monitoring is the impact of trade and travel restrictions on the shipment of vaccines and related supplies to Gavi countries. The Secretariat is working closely with UNICEF Supply Division to monitor, anticipate and mitigate any risks associated with manufacturers having supply chains disrupted and any other impact to operations.[10]

5.2 UNICEF has reached out to all manufacturers with supply agreements of vaccines that are procured and supplied through UNICEF (including those supported by Gavi) to understand if there are any current or potential future

[8] Described in detail in Harvey Fineberg's 2011 report
[9] Some of these issues are in scope of the Pandemic Influenza Learning Agenda approved by the Board, which focuses on exploring the feasibility and impact of routine seasonal influenza vaccination of HCWs on pandemic preparedness.
[10] See 'Impact of COVID-19 on vaccine supplies'. https://www.unicef.org/supply/index_103928.html

risk in their ability to produce, ship and deliver vaccine for ongoing programmes including outbreak response and preventative campaigns. Manufacturers have indicated that they are vigilantly reviewing their current and future sources of raw materials and other supplies for production and shipping. To date, there are no anticipated disruptions to production and risk mitigation strategies are being put into place to address future risks (beyond 6-9 months) that have been identified. All manufacturers have indicated their commitment to notify UNICEF in the event there is a risk of future supply security due to production disruptions. Manufacturers have also requested any indication of possible programmatic disruption as a result of COVID-19 response activities, such as delays in introductions or campaigns. Specifically, regarding vaccine shipments sourced from China, these are being managed very closely to ensure available and timely air transport to reach their destination. To date, UNICEF has not had to source from alternative suppliers for purchase orders placed with Chinese suppliers and there have been no programmatic disruptions. There have been some delays of planned shipments for routine vaccines that are sourced outside China but are routed through Beijing to DPRK (Democratic People's Republic of Korea). However, there have not been any programmatic interruptions as a result and UNICEF is monitoring flight availability very closely to ensure shipments are scheduled before risk of stock-out.

5.3 *Secretariat operations*

5.4 Both Switzerland and the United States are currently classified as countries with local community transmission. The Secretariat is currently managing risk as part of its day to day operations and is working closely with WHO, the Global Fund and local authorities to monitor the situation and ensure our response is appropriate, coordinated and reflects the latest and best available evidence. The Secretariat's overall approach is intended to ensure business continuity and alleviate anxiety whilst minimising risk. We are convening daily meetings to review the evidence and make changes if necessary. Staff have been advised to work from home if they feel unwell or consider themselves to be at heightened risk (e.g. due to a pre-existing condition). We are also considering how to mitigate the impact of travel restrictions and the potential disruption to our work and achievement of our strategic goals, due to reduced engagement and visibility to issues affecting countries.

5.5 In terms of the Gavi travel policy, which also applies to meetings and conferences, staff are restricted to essential travel only with the guidance to work remotely for these functions where feasible. Where travel is deemed to be essential, there is an assessment on a case-by-case basis of the risk posed to the traveller, the risk posed by the traveller to the health of others and the risk of quarantine while on travel duty. Whilst noting that the current situation may have implications for the replenishment event in June we are currently moving ahead as planned, in consultation with the UK government. A more detailed update on replenishment, including implications of COVID-19, is provided in a separate pre-read. The Secretariat will continue to keep the Board updated as the situation evolves.

5.6 *Board and Committee meetings*

5.7 The Secretariat is exploring approaches to minimise disruption to Board and Committee meetings. In the short term, this includes prioritising virtual meetings, including consideration of how to manage time zones (e.g. limiting the length of virtual meetings each day, but spreading meetings over an additional day that would have been allocated to travel). For meetings in the medium term, we will continue to monitor the situation and develop alternative plans to manage meetings virtually if required.

5.8 *Impact on Alliance operations to date*

5.9 To date, a number of Alliance activities, primarily in the WPRO (Western Pacific) region, have been impacted by the COVID-19 outbreak; this summary is provided for information. These include the postponement of regional meetings (e.g. WPRO-hosted Regional Working Group for regional-level partners due to take place in Cambodia; a World Bank meeting for Pacific country governments). Within WPRO, resources have been diverted to support country efforts, significantly reducing the regional EPI focus. Finally, we are aware of constraints on flight routes due to travel restrictions from key hub airports and increased pressure on alternative routes.

Further background reading

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- Kissler, S et al. Medrxiv. Projecting the transmission dynamics of SARS-CoV-2 through the post-pandemic period. [pre-print] https://www.medrxiv.org/content/10.1101/2020.03.04.20031112v1

- Li et al. NEJM. Early Transmission Dynamics in Wuhan, China, of Novel Coronavirus–Infected Pneumonia https://www.nejm.org/doi/full/10.1056/NEJMoa2001316

- Nature Coronavirus latest (useful digest of current science; constantly updated): https://www.nature.com/articles/d41586-020-00154-w

- Report of the WHO-China Joint Mission on Coronavirus Diseases 2019 (COVID-19) https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf

- Yamey et al. Funding the development and manufacturing of COVID-19

vaccines – Background paper for the World Bank/ CEPI financing COVID-19 vaccine development consultation on February 20, 2020: https://gavi.boardeffect.co.uk/downloads/vfile/455773

- WHO R&D Blueprint : COVID019 R&D: https://www.who.int/blueprint/priority-diseases/key-action/novel-coronavirus/en/