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Subject: Week 5: EFPIA & Vaccines Europe follow-up to 9 April 2020 videocall on COVID-19 with Commissioners

Attachments: COVID-19 EFPIA & Vaccines Europe Situational Assessment 090420 Final .docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Commissioners Kyriakides, Breton and Lenarčič,

In thanking you again for today's call on COVID-19, please find attached as promised, the EFPIA and Vaccines Europe situational analysis to date, 9 April 2020, as well as the detailed answers to the questions that you had posed ahead of the meeting (Appendix 2) and an update on treatment and vaccine developments (Appendix 3).

In the attached document, we have noted **in red** any new developments and additional requests to those shared after last week's call. We have kept any previously communicated information and requests that continue to be relevant today, in black, for ease of reference.

Please note that we have added information on Member State bans/measures to limit the movement of medicines on page 4 that was only partly mentioned during this morning's call notably for the following countries: Hungary, Czech Republic, Estonia, Greece, Poland, Portugal, France and Belgium.

As always, my Colleagues and I remain at your entire disposal for any further information you might require.

With very best wishes for a Happy Easter and sincere thanks for all that you continue to do,

[Redacted]

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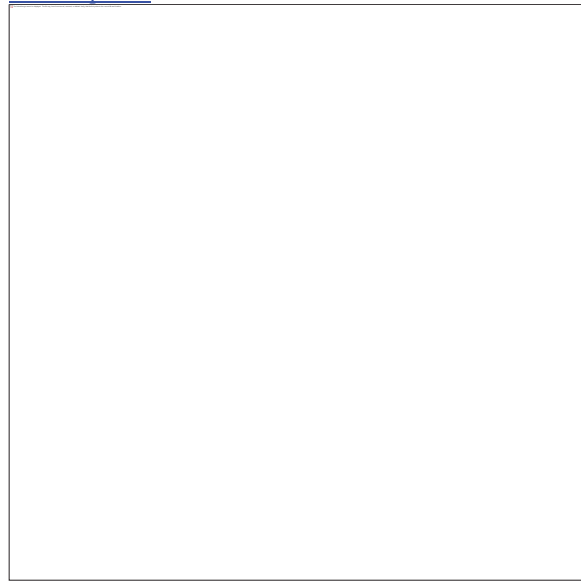
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For more information related to COVID-19 see: <https://efpia.eu/news-events/the-efpia-view/statements-press-releases/european-pharmaceutical-industry-response-to-coronavirus/>

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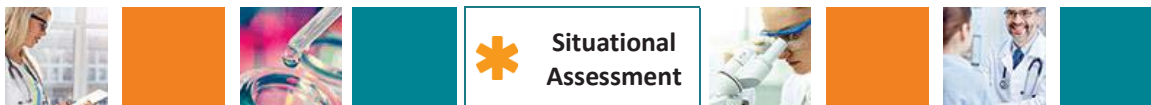
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Final



Potential impact of coronavirus (COVID-19) on the availability of medicinal products in Europe



BLACK = updates to 3 April 2020

RED = updates to 9 April 2020

Overall assessment

Today, 9 April 2020, EFPIA is aware of **two** members forced to notify a shortage in Spain and Italy due to increased demand for **off-label use** of their medicines in order to treat COVID-19. In addition, **one** member has notified EMA and respective NCAs on projected shortages of COVID-19 pneumonia treatment related products (benzodiazepines IV) in some EU Countries. The companies concerned are ramping up production and accelerating resupply, so this will be a temporary situation. Outside these specific examples, EFPIA does not have any knowledge of shortages for single source medicinal products or vaccines from among the EFPIA membership. Supply and manufacturing are however under strong pressure and while manufacturers are doing what they can to secure security of supply we need the cooperation and support from European and national authorities to be able to ensure continuity of supply, providing regulatory flexibilities and removing measures that impact manufacturing and supply.

Within the European Union the situation is currently highly dynamic and everything will depend on the length of the current crisis as well as the overall level of cooperation and coordination among Member States to support our efforts to ensure continuity in manufacturing and distribution of medicines.

We greatly appreciate the initiative from European Commission (DG SANTE) to issue guidance on the optimisation of supply of medicines for COVID-19, as well as the Commission having consulted with us beforehand. We consider that it touches upon all the major areas of concern which we have highlighted over the last weeks. We sincerely hope the guidance will be implemented in Member States, if not to the letter, at least in its intended spirit, to its full extent. While we await the implementation of the guidance, EFPIA member companies have three immediate concerns in light of past developments.

- 1. Stockpiling requests** - Stockpiling requirements apply to all medicines but this is particularly acute for medicines which are reported in various medical/scientific journals and in the media at large that are showing early signs of clinical efficacy in managing symptoms of COVID-19 and/or are subject to a clinical trial (since there is not treatment yet, all these medicines are currently used off-label). We are deeply concerned by what this means for patients currently undertaking on-label treatment with those



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medicines and by the overall impact on supply deriving from the various stockpiling requirements which inevitably follow such announcements.

While we understand various Member States wish to prepare themselves in case the pandemic should take the proportions seen today in Italy, Spain or France, requesting stockpiles for several times the normal amount of medicines puts a serious strain on our ability to supply the worse hit countries. **EFPIA members have enacted their pandemic preparedness plans for more than three months now and in a lot of cases this has meant already that they have increased capacity and they have been able to cope with the sudden exponential surge in demand for both COVID and non-COVID treatments.** If the additional stock produced today is fully or in great part absorbed as a stockpile by one or more countries relatively less affected by the epidemic, this makes it impossible to supply the needs of the worse hit countries. **It is practically impossible for manufacturers to distinguish between stockpiling requests (long term) and critical patient needs (right now).**

Demand data for planning purposes – in conjunction with the stockpiling requests, manufacturers desperately need epidemiological data regarding the spread of COVID-19 and/or Member States data regarding hospitalization rates and projections on a weekly and country per country basis (patient needs data for medicines listed in the letter from the Commissioner for Health of 3rd April 2020). **Industry would need to know whether we can get this data and whether we can assist in asking the right research questions or provide resources to help with the data crunching/analysis/modeling.** Manufacturers are forced to make allocation decisions based on the models and projections they develop internally, in an effort to help countries with the highest patient need as a priority (while balancing the political repercussions from all other requests). **Can the European Commission/EMA issue guidance on how manufacturers can best allocate existing, newly enhanced and rolling supply to Member States?**

2. **I-SPOC (Industry Single Point of Contact) as a 2-way communication channel** - we need more clarity about how the EMA I-SPOC system will be operationalised in practice. We feel the window of opportunity is quickly closing on taking proactive actions to avoid shortages from actually taking place. We have specifically envisioned the I-SPOC system as a 2-way communication channel between manufacturers and EMA so that practical proactive actions can be taken. **We wish to absolutely avoid that the I-SPOC is simply used as a notification of shortages channel and for this to happen, we all need this to be an actual 2-way communication channel.**
3. **Export bans/requisitioning of medicines** – export bans continue to exist across the EU (Hungary is particularly acute), however we observe a proliferation of measures having equivalent effect between Member States (such as **requisitioning of medicines – example of France and Belgium – many companies have their distribution centers for Europe or rest of the world located in Belgium**). It is critically important that Member States lift any export bans or equivalent measures on medicines manufactured to meet specific patient demand within or outside EU. It is understandable that each Member State intends to ensure the availability of necessary medicines for their population. However, the consequences of export bans are directly detrimental on the availability of medicines both on the EU market and globally, as well as risk retaliatory measures from trading partners that could impact the EU (e.g. US).

The EFPIA Secretariat monitors the situation closely with members and will report back any new developments as they arise. **We are extremely grateful that, at the request of the industry associations**



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and after discussions with the national authorities, the EMA has confirmed they will put an Industry Single Point of Contact (I-SPOC) system in place. We look forward to the quick implementation of the SPOC system and stand ready to provide any additional information or support as needed. Following the EMA press release of 6 April we understand that Industry Single Point of Contact (I-SPOCs) will receive, by the end of this week, the list of essential medicines needed to treat COVID-19 as well as the list of Competent Authorities SPOCs at national level. This is needed to urgently operationalize the I-SPOC system which we expect on 17 April. We look forward to a structured 2-way dialogue with EMA and national authorities via the I-SPOC and we hope that our concerns for confidentiality of the information transmitted will be addressed (even if they have not been explicitly acknowledged so far). We take our responsibilities very seriously and will take the first steps via the I-SPOC on the industry side.

Continuity of manufacturing and supply is industry's priority n.1

In order to make sure that research-based pharmaceutical manufacturers continue to manufacture and distribute medicines to satisfy the needs of patients in Europe, we call upon the European Commission and Member States to work together and ensure that the following operational, regulatory, research continuity and strategic measures are implemented. Since the start of the dialogue between EFPIA and the 3 Commissioners, we have worked on a number of challenges and threats to the continuity of manufacturing and supply of medicines in Europe. As the situation continues to be highly dynamic, this situational assessment aims to prioritize ongoing challenges (section A) but also to keep track of challenges which have been mostly resolved but where localized threats remain (section B).

A) ONGOING CHALLENGES:

Operational

1. **National stockpiling requirements** – an increasing number of countries but also wholesalers/traders, healthcare professionals and patients are requesting stockpiles, which are incommensurate with respect to expected demand following from company epidemiological estimates (especially for non COVID-19 treatments, e.g. cardio-metabolic). While we understand the reasons for that, this is seriously disrupting supply in this critical moment preventing other countries from getting access to the medicines and vaccines they need. **We ask the European Commission to urgently provide formal guidance to EU Member States to stop countries from stockpiling.** Companies should not be forced to support any request to stockpile additional volumes within a specific country to ensure they can continue to supply against normal demand, helping to ensure continuity of supply across Europe and the globe. Where we see a real increase in demand for some products we will do our best to supply, but this will be difficult to manage if we need to supply to meet the demand coming from unilateral national stockpile initiatives. **We would expect the EU Executive Steering Group on Shortages caused by major events to provide the Commission with a set of concrete recommendations** and the Commission to clearly act upon those countries introducing unilateral stockpiling requirements that put at risk the overall supply of critical COVID-19 medicines in Europe.

We have received the letter from the Commissioner for Health's Cabinet on 3 April 2020 asking EFPIA members to do their utmost to increase manufacturing and supply of medicines for a list of products typically used in ICU. We have immediately shared this letter with our Board, but also directly with our designated I-SPOCs so that they are aware of the request. **We continue to urge**



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EMA to immediately take contact with the I-SPOCs to understand exactly each company's specific situation regarding those medicines: who produces what, where, in what quantities, how much more spare capacity can be put online and when, how those medicines are distributed and where.

2. **Lack of coordination in treatment protocol for COVID-19 potential treatment candidates** – one additional challenge, closely related to the stockpiling requirements relates to how the various potential treatments for COVID-19 are used off-label. EFPIA members observe inconsistent treatment protocols between countries but also within countries which leads to erratic use of medicines. Different treatment protocols also lead to complicated dose allocation further exacerbated by different pack sizes in different member states. Moreover, when companies are asked about treatment protocols they are unable to provide such information as, from a regulatory and legal point of view, these treatments are still experimental. **We ask the EMA to work with national regulatory agencies and to issue streamlined treatment guidelines for all Member States.**

3. **National export bans** – due to the recent sequencing of unilateral Member State driven initiatives, we have seen a proliferation of full export bans for medicines and vaccines and/or medical equipment. While we understand the need for national governments to reassure their citizens, we imagine that the export bans were intended for preventing the parallel exportation of products/equipment already released for sale on the local market but not for finished or semi-finished goods or PPE manufactured locally and intended for distribution/sale in other Member States. Export restrictions are encountered for PPE intended for shipment from an EU supplier to a non-EU manufacturing site for production of medicines for global markets including the EU. **We call in the strongest possible way on the European Commission and Member States to work together and continue to allow the movement of medicines/vaccines and medical equipment (including PPE) from factories across Europe to where they are needed the most.**

Export restrictions remain in place in Hungary (export ban on all products containing hydroxychloroquine sulfate (or its intermediate) and products containing propofol; export of all other pharma products requires a declaration of exemption from the above (and trucks are being stopped as of 6 April)), Czech Republic, Estonia (controls on some products), Greece (for products needed for the treatment of COVID-19), Poland (prior authorization required for a list of products including COVID-19 treatment), Portugal (prior notification required).

In addition, we observe a proliferation of measures having equivalent effect between Member States (such as **requisitioning of medicines – example of France and Belgium – many companies have their distribution centers for Europe, or the rest of the world, located in Belgium**). One positive development observed on 8 April was the modification of the Belgian measures from export bans to a requirement to notify the authorities, which is a step in the right direction. However, despite this modification, we continue to observe that medicines considered essential treatments of COVID19 patients, are blocked by the Federal Medicines Agency from export to non-EU markets in case local Belgian hospitals report shortages of this particular medicine. In **Hungary**, The Government Action Group issued guidance on protecting vital services and operations, including pharmaceutical companies, putting 140 companies under the direct supervision of the Ministry of Defense. We do not know what this means in terms of future actions.



4. **Demand planning/forecasting** – manufacturing capacity and cadence are normally scaled up to ensure that they meet the needs of patients in normal circumstances. In order for EFPIA members to better plan their manufacturing capacity and make sure that all possible measures have been taken to assure continuity, **we urgently call upon the European Commission/Member States/European Center for Disease Control to regularly share with us their most pessimistic predictions for the number of COVID-19 infections as well as any relevant type of sub-analysis (per age group, expected severity, per country etc.).** Furthermore, any other predictions for the number of other patients whose treatment will be disrupted due to the prioritization within hospitals are welcome. This information is crucially needed by manufacturers so that they can adequately forecast demand and make the necessary planning both in terms of EU wide manufacturing capacity but also detailed distribution arrangements to supply those medicines to the right regions at the right time. Unfortunately, we understand that the EU Commission webinar on 3 April where the ECDC was supposed to present some of the information that they have did not take place due to technical difficulties. We were expecting this to be a first step in obtaining an indication into the future and we remain very concerned that this may further exacerbate stockpiling requirements from Member States listed as ‘next in line to be severely impacted by the pandemic’. We hope that the information exchange will continue via the I-SPOC as well.

5. **Increased demand for some product categories and threats of unilateral decisions by Member States** – For some categories of products (e.g. HIV, pneumococcal vaccines) that can be used in the treatment of COVID-19 some companies are currently facing an evolving unstable situation, with significant increased demand from all countries for some of their HIV products (stockpiling), the need to guarantee needs for HIV patients, the threat of seizure of pharmaceutical supplies or stocks in several countries via emergency power, etc. Vaccine manufacturers observe an increased demand for some vaccines for respiratory diseases, e.g., pneumococcal, pertussis and influenza vaccines and manufacturers are currently reviewing whether current production capabilities can be increased. **The increase in demand for pneumococcal vaccines over the last few weeks in certain markets, manufacturers are experiencing intermittent backorders. This increase has just occurred, so manufacturers are evaluating the pattern of demand to determine the duration of the stockout and have adjusted production schedules to replenish as soon as possible.**

6. **Supply chain disruptions that could be caused due to lack of action on the side of the local authorities to better manage the ‘panic’ purchase of prescription medicines at the pharmacy level** - A growing number of companies’ affiliates have received requests from local authorities as well as distributors to resupply much more than usual supply levels triggered by an increased demand from the pharmacies. Although a few patient organisations in Europe are actively advising patients against ‘panic’ stockpiling (*including in Denmark and Poland*), some have given no advice, and in other markets online patient communities (*which often have cross border impact*) are advising patients to resupply up to 3 times the normal amount of medication. Although it is utterly understandable for authorities and/or patient organizations to recommend to high-risk patient categories to refill their prescriptions for a longer period of time in order to avoid them travelling un-necessarily, such a demand shock is problematic for supply chains. We would like to reassure patients, healthcare professionals and national authorities that manufacturers are able to continuously meet normal prescriptions today and in the immediate future. There should be zero change in the level of confidence that patients have in the pharmaceutical distribution ecosystem.



Against this backdrop, and to avoid supply chain disruptions across Europe, we recommend that **the European Commission provide guidance to Member States to:**

- ***Recommend healthcare professionals and pharmacists to continue to supply normal prescriptions levels to patients across Europe.***
- ***Consider alternative measures already today, to re-supply patients in due time in case of exceptional circumstances (allow for family members or volunteers to fill out the prescription, allow home delivery services etc.).***
- ***Level the flow of products across pharmacy and distributor levels on essential drugs, to ensure that products are readily available in the markets and can be supplied in case of urgency/stock-out.***

A recent example of very effective national legislation to address this is from Finland. If the European Commission would recommend similar measures to all Member States this would address the situation before shortages become a reality.

In short, in Finland:

- Pharmacies are obligated to ensure adequate amount of medicines is available but need to avoid ordering unnecessary big amount of medicines from wholesalers even if medicines demand can temporarily increase.
- Pharmacies need to make sure that medicines are used and dispensed appropriately according to terms of Marketing Authorisation and delivery. Pharmacies need to dispense prescription medicines at most the amount responding 3 months use.

On 1st April, Belgium has also introduced measures in the same respect which are rather proportional in that they limit the distribution of stocks along the supply chain to average sales data for the same month in 2019 + 50%. The Belgian authorities are also asking for wholesalers/hospitals/pharmacies to notify them if they have stock in excess of the same formula (last year 1-month sale + 50%) so that they may be re-distributed to other actors in Belgium. We believe these are sensible measures to more evenly distribute stocks along the supply chain.

Research continuity

- 1. Clinical trials continuity** - COVID-19 is materially impacting global medicines development programmes (clinical trials, regulatory approval delays, inspections, etc.). Europe hosts **one third (4,436)** of the world's 13,490 ongoing clinical trials¹ across all phases. Patients involved in these trials, evaluating 1988 candidate treatments including 750 for rare diseases², depend on us to work together to retain the value of this collective investment during this time of crisis. In the case of clinical trials, challenges have been experienced due to quarantines, site closures, travel limitations, disruptions in supply chain for investigational and ancillary products and infection of trial investigators and patients. All of these challenges may lead to discontinuities in the protocol management and data integrity of trials, which threatens to devalue the considerable investment by patients, investigators, healthcare organisations and sponsors.

¹ Informa CiteLine Database, as reported in the BIO/BioCentury Survey, March 2020.

² Ibid



2. **Maintaining clinical research in Europe requires clear guidance and flexibility under these challenging circumstances.** Even where infection hasn't directly intervened, quarantine, social distancing and broader COVID-19 concerns may prevent patients from being able to reach the trial site. Organisations managing and sponsoring clinical trials are also experiencing a higher proportion of staff working from home during this period. Monitoring, data collection, investigational products supply and lab and imaging work may be affected. This is leading to reports of protocol and standard operating procedure deviations due to missed visits, or changes in processes. Flexible approaches (e.g. remote monitoring, homecare visits, direct shipment of drug) that maintain the standards of GCP but with managed alternatives to ensure trial integrity and patient benefit are urgently needed.

Conduct of vaccine clinical trials – vaccine manufacturers have put on-hold or are adapting the design of ongoing trials impacted by COVID-19 measures. In order to ensure the continuum of development plans, we need **EMA/HMA to allow a rapid restart of studies put on hold after the crisis, as well as expedited review of amendments of impacted trials.** In addition, timelines for evaluation of new Clinical Trials Applications (CTAs) should follow the normal timelines as much as possible.

3. The oversight of clinical trials is done at national level which is resulting in a patchwork of solutions - **a pan-European approach (consolidated guidance, good practice sharing, points to consider) may mitigate and slow down the disruption of clinical research.** International alignment on these measures beyond Europe would also ensure that this exceptional situation is consistently addressed in the global programme of clinical research, for the reliance of all patients and healthcare systems around the world.
4. We appreciate the guidance (*March 20, rev March 27*) issued by EMA, the GCP Inspectors Working Group, the Clinical Trials Facilitation and Coordination (CTFG, HMA), the Clinical Trials Expert Group (CTEG) and the European Commission (EC) and the biostatistics-focused guidance issued by the EMA. The flexibilities in the former will support the continuation of clinical research in these challenging times, as far as possible. However, the guidance only reflects where concurrence could be reached, and we ask that all parties make best efforts to align across Member States and to be as pragmatic as possible.
5. We also still need National Competent Authorities (NCAs) to apply these flexibilities to the trials in their jurisdictions, and we would ask the EU authorities to proactively engage with all NCAs to achieve this in practice. Our overarching ask to the EU and Member State authorities is **to complete the task of alignment** on the necessary flexibilities for the conduct on clinical trials and the **means to address data integrity** to ensure that these European trials are not wasted opportunities to advance healthcare for the future.
6. Because of pressures on healthcare systems, companies are still temporarily halting trial recruitment and trial beginnings in many cases. Practical changes are being explored to address clinical design requirements (e.g. endpoint measurement) where in-person clinical visits are not possible. The impact of these collective changes has the potential to weigh down the European clinical research environment for many months to come, and we will continue to seek solutions with the EU and Member State authorities that are efficient (e.g. limited requirement for substantial modifications) and effective (e.g. preserving data integrity).

Regulatory:



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The EU manufacturing and supply chain trade associations have developed a joint set of proposals calling for regulatory ‘flexibility’ without jeopardizing the quality and security of products for continuation of manufacturing and supply of products on the EU market. This set of proposals has been forwarded to EMA by separate email and is further discussed. The industry needs regulatory flexibility to respond to patients’ needs. The list covers the measures necessary for fast moving of medicinal products and medical gases from one market to another depending on urgent demand. To achieve this objective, the following measures are needed as priority (the list of measures not exhaustive):

1. Fast track regulatory processes related to COVID 19 (variations as IA IN/ MAs).
 - a. System of labelling the process COVID19 URGENT
 - b. Remove the need for some conditions/documentation to be provided with some variations to allow their approval in emergency situations.
2. To ship products between countries without the need to repackage - flexibility on language/ leaflet/ packaging/ pack size/ serialisation
3. Fast acceptance of products with valid MA from other countries
4. Relieve on administrative burden (e.g. original copies of documents with wet signatures in submissions etc.)
5. Extend the grace period for renewals in order to free up resources for more urgent submissions.
6. To accelerate market access for new products that are used in COVID19 treatments.

Strategic/Worldwide:

1. **A “European strategy for essential medicines for respiratory and intensive care use”.** This would entail:
 - Precise demand data gathering by country and region, precise manufacturing data and precise API availability data – by the EMA via the I-SPOC system
 - Allocation principles per country – by European Commission and Member States
 - Agreement on no hoarding / no excessive demands by member states – by Commission and Member States
 - Similarly, agreement not to control exports from e.g. manufacturing / distributor countries – by Member States
 - Build an emergency stockpile for exceptional use
2. **Export bans (India)** – the same export restrictions which affect manufacturing and distribution within the European Union are enacted worldwide as well, especially by India. **We call upon the European Commission to address this topic at the highest diplomatic level.**

We welcome the increasing contacts between Commissioner Kyriakides and her Indian counterpart on the coronavirus situation. **We hope this communication channel will help us to address the restrictions in place in the Indian market, which are becoming critical particularly for APIs. These export permits allowing companies to import APIs from India have not yet been approved by the Indian Government and we need European authorities to ensure this situation is addressed as soon as possible.** Furthermore, in addition to the export restrictions, the situation is now aggravated by the restrictions of mobility of Indian workers. We urge the Commission to get



support from Indian authorities to secure letters allowing manufacturing employees and suppliers to go to work. It is important to ensure labour but also transportation and customer officials are available to allow free flow of trade.

We understand that the Indian Government has amended their export policy and has lifted the export ban for a number of APIs & formulations that are important for the production of medicines in Europe. This is a very important first step but unfortunately some key products have not been included. According to latest information the Indian Ministry of External Affairs has stated that paracetamol and Hydroxychloroquine (HCQ) will be kept in a licensed category and their demand position would be continuously monitored. The Ministry adds that, "In view of the humanitarian aspects of the pandemic, it has been decided that India would license paracetamol and HCQ in appropriate quantities to all our neighbouring countries who are dependent on our capabilities. We will also be supplying these essential drugs to some nations who have been particularly badly affected by the pandemic." The formal statement further adds "after having confirmed the availability of COVID19 related drugs for all possible contingencies currently envisaged, these restrictions have been largely lifted. The DGFT has notified lifting restrictions on 14 drugs yesterday (6 April). With regard to paracetamol and Hydroxychloroquine (HCQ), they will be kept in a licensed category and their demand position would be continuously monitored. However, the stock position could allow our companies to meet the export commitments that they had contracted."

We propose to **use the system of I-SPOCs (as set-up with EMA)** to immediately obtain exact information from companies to obtain an overview of those registered/authorized medicinal products/raw materials (both for human and veterinary use) that could be potentially impacted by these measures. This could be done immediately at EU level and shared with national authorities – as opposed to companies responding to individual MS requests (on 26 March, Belgium launched such a data collection exercise).

3. **Proactive approach with the US - More importantly we should learn from recent experience and the Commission should pro-actively reach out to the US administration as several companies have major manufacturing sites located in the US supplying the entire world market. We call upon the Commission to proactively set up a sustained dialogue with the US administration in order to avoid any unilateral US decision that could negatively impact the supply of medicines to Europe.**

For the research-based industry, the ability to maintain manufacturing and supply chain operations without any hinderance with the US is perhaps more important than the same with China or India. For example, in the Boeing/Airbus case, one of the sectors put forwards for retaliatory tariffs are APIs. We urge both sides, at this time, to refrain from further hindering trade in APIs as 26% of all APIs necessary in Europe come from the US. Finally, also intra-company deliveries of protection equipment should remain possible for the pharmaceutical sector. Those deliveries should be exempted from export bans, as otherwise production sites are forced to stop the production of needed medicines.

4. **Air freight of critical medicines** – another emerging issue is the reduction in air traffic leading to less capacity to move medicines and materials around Europe and beyond. Pharmaceutical manufacturers rely on capacity in passenger flights to ship medicines and ingredients rapidly and securely. With the spread of the COVID-19 outbreak, we have seen a dramatic reduction in



passenger flights that normally carry these pharmaceutical goods. We cannot find viable alternatives that allow manufacturers to continue the much-needed flow of goods required to maintain production of medicines for patients. Addressing this issue requires coordination between the European Commission, Governments, air carriers, logistics operators and industry to ensure that we can continue to produce and ship medicines to where they are needed. The reduction of air freight should not be considered only from the angle of Asia (India and China are major sources of manufacturing) but also from the angle of USA where several companies have major manufacturing sites supplying the entire world market. We call upon the Commission to proactively set up a sustained dialogue with the US administration in order to avoid any unilateral US decision that could negatively impact the supply of medicines to Europe.

5. **World-wide acceptance of electronically signed certifications from EMA** – On 30 March EMA announced that they will no longer provide printed certificates but only electronically signed and authenticated certificates to maintain EMA's ability to provide these documents during the COVID-19 pandemic. The printed certificate service will be resumed back once measures to reduce the spread of COVID-19 are lifted. While we very much welcome the measure and we consider it to be practical during this crisis, **we anticipate that some regulators in third countries may not be ready to accept electronic certificates. In addition, we expect that some consulates will not accept electronically signed certificates for the legalization process.** EMA have notified EFPIA that the Agency has communicated these arrangements to WHO as well as to some third countries through their network. We welcome this outreach, and we would like to ask **EMA, and National Competent Authorities, to document the efforts to communicate their certification scheme arrangements during the pandemic.** If these are documented on the EMA and NCA websites, companies can then refer regulatory authorities to the website for confirmation of process.

B) RESOLVED (Situation has strongly improved, but some localized challenges remain):

7. **Dedicated 'Green-lanes' for medicines/vaccines/medical and protective equipment at borders** – as several Member States have re-introduced controls at their national borders, there is an urgent need for the **creation of dedicated 'green-lanes' at border/customs controls where priority is given for trucks carrying medicines/vaccines/medical and protective equipment for our sites. It is important for the continuity of manufacturing operations that this is extended to include components and starting materials.** We were grateful that the need for logistics routes to remain open was explicitly mentioned in the Commission's guidelines to Member States published on 16th March 2020, then supplemented by the Communication on the implementation of green lanes (March 23) intended to ensure continuous flow of goods on the ground in a cooperative manner, and finally complemented by the EU Commissions guidance from 26th March. This being said, the guidelines remain to be implemented and enforced by Member States. We still experience bottlenecks and delays e.g. when moving masks and protective equipment across the borders of Germany, France, to supply our sites in other countries (e.g. Italy, Spain or Switzerland – Please note that some companies have significant manufacturing capacity of critical products e.g. cancer treatment in Switzerland, which supply is directed to cover for Europe's demand). We also experience bottlenecks at the Turkish, Bulgarian and Greek borders. This is mainly due to the fact that all truck drivers are put in quarantine for 14 days at border gate before entering Turkey or have to be changed into a local driver which further adds to the delays. Possible mitigation strategies could include: application of 'Green lanes' at Turkish border as well or use of a sticker or



symbol to put on the trucks so that customs can single out those vehicles (they then should still present papers before passing).

We welcome the implementation of the 'green lane' guidelines and we appreciate the EU Commission also monitoring and facilitating Member States exchanges where possible on the implementation modalities of such 'green lanes'. In addition to inner-EU borders, also the borders where the EU has a customs union with third parties (such as with Turkey) should be monitored closely and transport of medical equipment, medicines and APIs should be facilitated.

Question: What are the measures in place for enforcement of the existing guidance? How can we report any events in the quickest and most effective possible way to the Commission and/or competent national authorities?

8. **Manufacturing cadence** – manufacturing of medicines and vaccines needs to continue unencumbered. EFPIA member companies consider their employees as the best asset they have and take the utmost precautions to ensure that they can continue working in the safest possible conditions. In this respect, manufacturing of medicines is a highly controlled environment and companies need to ensure their workers carry the most appropriate Personal Protection Equipment (PPE). **We call upon Member States to ensure that pharmaceutical companies are listed on the priority list for distribution/supply of PPE at national level, and the prioritization of PPE for our sites is not hindered by, for example, government's measures to take control of the distribution or 'expropriation' of existing PPE supplies in the country.** This is crucial to ensure that our workers can continue their activity in a safe environment and avoid further manufacturing tensions due to contaminations and reduced workforce. This recommendation was well noted by Commissioner Breton on 13 March. **EFPIA would like to get more information on how this recommendation will be implemented and enforced at country level.** Furthermore, some authorities are requesting manufacturers to provide part of their stock of PPE to hospitals that are in urgent need.

Question: Several companies have compiled some indicative figures on required PPE for their manufacturing sites. How can the Commission ensure that companies will have priority access to PPE in the coming weeks in case of transfer of equipment to hospitals? How can the Commission facilitate a common approach with national authorities, to ensure that both EU and national emergency centers which are involved in the procurement and distribution of equipment and masks do take due account of the need to prioritize equipment for manufacturing sites?

Medicines and Vaccines manufacturers are facing unexpected issues such as the need to find alternative providers of raw materials and reagents. Some service providers are not able to maintain their normal operations as they are not considered critical businesses by authorities in their country. This is becoming an urgent matter particularly for medicines and could also create a future health problem for vaccines due to the long leads to manufacture. It is important that not only pharmaceutical manufacturers but also service providers used by manufacturers are classified as essential service allowing for continued supply despite the "lockdown". We urge European authorities to provide clear guidelines to Member States to ensure both manufacturers and service providers are considered essential business and can continue to operate allowing continued manufacturing and supply of key medicines and vaccines.

9. **Free movement of key/critical employees** – we are concerned that **the proliferation of measures to automatically quarantine any citizen coming from any Member State upon entering a**



particular Member State will lead to significant disruptions of operations (both manufacturing and transportation, in the case of truck drivers). Examples we see today are:

- a. The situation between Slovenia and Croatia, with a high risk that critical workers from Croatia are quarantined when they commute back from Slovenia;
- b. Restriction of movement of cross-border commuters who are essential employees or maintenance support staff for manufacturing sites (e.g. France – Germany or France/Germany - Switzerland);
- c. Reports of restriction of movement or quarantine of drivers: specifically, Poland has imposed an obligation at their border which increases the border delay up to 30 hours.

We are extremely grateful for the guidelines published by the European Commission on 30 March which allows workers with “critical occupations” to cross EU internal borders amid the crisis. We are glad to see that “Workers in pharmaceutical and medical devices industry”; “Workers involved in the supply of goods, in particular for the supply chain of medicines, medical supplies, medical devices and personal protective equipment, including in their installation and maintenance” and “Scientists in health-related industries;” are included in the definition of those allowed to cross borders.

- 10. Stock level data sharing** – We look forward to operationalizing the I-SPOC system together with EMA and National Competent Authorities so that we may enable the 2-way communication and rapid information and guidance exchange to mitigate and prevent potential bottlenecks in the supply from translating into actual shortages.



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Appendix 1

Vaccines Europe's concerns related to the impact of the COVID-19 crisis

*** Version 7th April 2020 submission***

Issues related to vaccine manufacturing and supply

General statement

To this point, manufacturers have not experienced vaccine shortages but this is a dynamic situation; we continue to monitor all parts of supply chains closely and proactively assessing existing contingency plans. In addition, Companies have established appropriate incident management teams and have manufacturing continuity plans.

Increased demand for vaccines against respiratory diseases

Some VE members are currently experiencing increased demand for vaccines against respiratory diseases (influenza, pneumococcal and pertussis-containing vaccines) in some MSs such as Germany, Spain, Denmark, Netherlands, Ireland, Norway, Belgium, Sweden, Latvia, Bulgaria, Finland and **Greece** + UK This is the situation on 2nd of April, but other MSs may also increase their demand in the coming days/weeks. Vaccines have long cycle times of production and to match increasing vaccines needs require long-term demand anticipation. There are also regulatory barriers to move products across **borders within and from outside the EU. Manufacturers are evaluating the pattern of demand to** determine the duration of the stockout and have adjusted production schedules to replenish as soon as possible.

Vaccines Europe's call: there is a need for the Members States to urgently review the forecasts of vaccine demand and to engage with individual manufacturers to inform them on their needs regarding the vaccines against respiratory diseases and jointly find solution Remove the regulatory barriers in terms of labelling and packaging to allow movement of products within the EU and from outside the EU.

Service providers and providers of raw material

Some service providers and providers of raw material are not able to maintain their normal operations as they are not considered critical businesses by authorities in their country. This is becoming an urgent matter particularly for medicines and could also create a future health problem for vaccines due to the long leads to manufacture vaccines. It is important that not only pharmaceutical manufacturers but also service providers used by manufacturers are classified as essential service allowing for continued supply despite the "lockdown". **We urge European authorities** to provide clear guidelines to member states to ensure both manufacturers and service providers are considered essential business and can continue to operate allowing continued manufacturing and supply of key medicines and vaccines.

In addition, one of the concerns is that vaccines produced today may reach the market only in months/years from now.

Vaccines Europe's call: there is a need for more regulatory flexibility to ensure that measures taken by manufacturers to ensure production today during the crisis (e.g. change of raw material producers) are considered acceptable from a regulatory perspective when the vaccine lots will reach the market in the future. Regulatory flexibility is particularly important at the moment considering that both vaccine manufacturers and authorities are facing challenges due to the increase of activities in parallel with increased absenteeism and containment measures.

Disruptions in the supply/distribution chain of ingredients/semi-finished and finished products

Disruptions in the supply/distribution chain of ingredients/semi-finished and finished products within the EU have significantly decreased thanks to efforts from EC and MSs.

With regards to disruptions in supplies from outside the EU, Vaccines Europe member companies have not reported so far disruption for finished products and are still assessing the situation for raw material and reagents. One company reported that semi-finished goods sourced from the US packed at a French site have been significantly delayed due to flight cancellations.



Protective gear (PPE)

Vaccines Europe members are facing significant tightness of supply of PPE. Vaccines Europe members are open to look at collaborations with competent authorities to further secure priority safety equipment for employees that are critical in securing manufacturing and supply of vaccines.

One company has reported that hydroalcoholic gels and thermometers are also missing in production sites, like everywhere in community pharmacies. This company has started its own production of hydroalcoholic gel but is dependent of raw material.

Any action that could accelerate to shipment of PPE and hygiene material is welcome. Otherwise, production sites will be obliged to close if hygiene measures cannot be maintained. **We call upon Member States to ensure that pharmaceutical companies are listed on the priority list for distribution/supply of PPE at national level,**

Electronic Certificates of Pharmaceutical Products (eCPPs)

Vaccines Europe welcomes EMA publication on its website regarding eCPPs. Vaccines Europe would like to encourage all National Competent Authorities issuing CPPs to follow a similar approach.

World-wide acceptance of electronically signed certifications from EMA – On 30 March EMA announced that they will no longer provide printed certificates but only electronically signed and authenticated certificates to maintain EMA's ability to provide these documents during the COVID-19 pandemic. The printed certificate service will be resumed back once measures to reduce the spread of COVID-19 are lifted. While we very much welcome the measure and we consider it to be practical during this crisis, **we understand that some regulators in third countries are not accepting electronic certificates (Asia-Pacific and Latinoamérica). In addition, we expect that some consulates will not accept electronically signed certificates for the legalization process.** EMA have notified that the Agency has communicated these arrangements to WHO as well as to some third countries through their network. We welcome this outreach, and we would like to ask **EMA and HMA (coordinating the National Competent Authorities) to document the efforts to communicate their certification scheme arrangements during the pandemic.** If these are documented on the EMA and NCA websites, companies can then refer regulatory authorities to the website for confirmation of process.

Issues related to vaccine clinical trials

Vaccines Europe's acknowledges the publication by EMA of the guidance on Management of Clinical Trials during the COVID-19 (Coronavirus) pandemic but wants to reiterate that harmonised implementation of the guidance across MSs is key and should be encouraged by EMA/HMA. Version 2 of the guidance provides useful clarifications. Vaccines Europe members are still assessing whether some further adjustments/clarifications are needed and will continue to communicate with EMA on the topic as needed.

Vaccines Europe also welcomes the ICMRA report published March 24th, 2020. It is essential to set up a continuous dialogue between EMA, FDA, WHO and other relevant authorities and including vaccine manufacturers to ensure alignment between authorities on regulatory requirements to be met to obtain marketing authorisation of vaccines against Covid-19 within the shortest possible timelines.

Some vaccine manufacturers are developing vaccines against COVID-19 based on Genetical Modified Organisms (GMOs). Harmonisation of GMO applications/requirements across members states in EU is critical for an accelerated start of clinical trials. Vaccines Europe asks EMA and EC to facilitate alignment of requirements across countries as this would avoid lengthy interactions between manufacturers and relevant authorities.

Finally, vaccine manufacturers want to highlight that they have put on-hold or are adapting the design of ongoing trials impacted by COVID-19 measures. In order to ensure the continuity of development plans, Companies are expecting EMA/HMA to facilitate rapid restart of studies put on hold after the crisis, as well as expedited review of amendments of impacted trials. In addition, timelines for evaluation of new Clinical Trials Applications (CTAs) should follow the normal timelines as much as possible.

Issues related to regulatory aspects

Vaccines Europe stresses the importance of regulatory flexibility during Covid-19 crisis and is working with other associations on proposals that will be submitted to EMA.



Industry needs regulatory flexibilities, set out appropriately as guidance documents by the EU and Members State authorities, to facilitate the development and supply of all medicinal products during the COVID-19 pandemic: by having clear guidance, we can expedite action and avoid delays from regularly referring back to authorities on a case by case basis.

As per the European regulation, approval of some new vaccines is subject to site(s) inspection conduct (e.g. non-European manufacturing sites) and release of the GMP certificate. Several ongoing centralized registration procedures require manufacturing and control site's inspections to happen in a given timeframe to allow that a positive CHMP opinion be granted followed by the grant of the Marketing Authorisation (MA). Some of these inspections have already been postponed due to the COVID-19 and the subsequent inability of EU Member States' inspectors to travel to the concerned countries; should the situation last for few more months, any further delay in conduct of these inspections will put at stake the timely release of the MA.

In such particular situations and in order to avoid any delay in market introduction of new vaccines, the applicant and the manufacturing sites should closely collaborate with EMA and the designed Member States' inspectorates as required in order to assess GMP compliance status of the manufacturing sites. Flexibility and /or demonstration of agility would be required to temporarily mitigate sponsors' reporting potential delays. This should include the possibility of virtual inspection and/or mutual recognition of the inspections conducted by other (European or non-European) authorities. Please note that vaccines are not included in the MRA between EU and US on GMP inspections.

Paper submissions: Greece had removed the need of paper submissions but last week has re-introduced this requirement saying that it is imposed by their legal department.



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Appendix 2

EFPIA response to the questions submitted by DG SANTE on 07 April 2020

For medicinal products

1. *Is increased production meeting the surge in demand in COVID-19 related medicines? Are there any new shortages of medicinal products (such as, paracetamol, anesthetics, antibiotics or muscle relaxants) due to the current COVID-19 epidemic since the last call?*

EFPIA members have enacted their pandemic preparedness plans for more than three months now and in a lot of cases this has meant already that they have increased capacity and they have been able to cope with the sudden exponential surge in demand for both COVID and non-COVID treatments. But if the additional stock produced today is fully or mainly 'hoovered up' as a stockpile by a country or countries relatively less affected by the pandemic, it becomes impossible to supply the worse hit countries to meet their needs. As mentioned before, we absolutely need EU wide coordination on stockpiling requirements.

2. *Could you please give an update, if any, on the development of possible new treatments for COVID-19 such as remdesivir, hydroxychloroquine, Kaletra/interferon beta, tocilizumab, etc?*

Company representatives provided updates

3. *How do you anticipate the possible surge in demand for products that could possibly show efficacy in the coming weeks (see list above)? Are you able to increase the capacity and supply of the latter?*

Refer to company representatives

4. *Do you experience any new disruptions in your supplies from outside the EU? And if so, what is it that causes them? In particular, on hydroxychloroquine, how can the possible increased use be affected by export restrictions from third countries (e.g. India)?*

We continue to be concerned about the developments in India. We welcome the increasing contacts between Commissioner Kyriakides and her Indian counterpart on the coronavirus situation. We understand that the Indian Government has amended their export policy and has lifted the export ban for a number of APIs & formulations that are important for the production of medicines in Europe. This is a very important first step but unfortunately some key products have not been included. According to latest information the Indian Ministry of External Affairs has stated that paracetamol and Hydroxychloroquine (HCQ) will be kept in a licensed category and their demand position would be continuously monitored. The Ministry adds that, "In view of the humanitarian aspects of the pandemic, it has been decided that India would license paracetamol and HCQ in appropriate quantities to all our neighbouring countries who are dependent on our capabilities." However, we do not know formally which countries are those.

Furthermore, in addition to the export restrictions, the situation is now aggravated by the restrictions of mobility of Indian workers. We urge the Commission to get support from Indian authorities to secure letters allowing manufacturing employees and suppliers to go to work. It is important to ensure labor but also transportation and customer officials are available to allow free flow of trade.

5. *Do you experience any new issues related to the specific regulatory context of clinical trials?*



We appreciate the guidance (March 20, rev March 27) issued by EMA, the GCP Inspectors Working Group, the Clinical Trials Facilitation and Coordination (CTFG, HMA), the Clinical Trials Expert Group (CTEG) and the European Commission (EC) and the biostatistics-focused guidance issued by the EMA. The flexibilities in the former will support the continuation of clinical research in these challenging times, as far as possible. However, the guidance only reflects where concurrence could be reached, and we ask that all parties make best efforts to align across Member States and to be as pragmatic as possible.

We also still need National Competent Authorities (NCAs) to apply these flexibilities to the trials in their jurisdictions, and we would ask the EU authorities to proactively engage with all NCAs to achieve this in practice. Our overarching ask to the EU and Member State authorities is to complete the task of alignment on the necessary flexibilities for the conduct on clinical trials and the means to address data integrity to ensure that these European trials are not wasted opportunities to advance healthcare for the future.

6. *Should medicines be considered in future EU level joint procurements?*

It is difficult to voice a definitive opinion on this question at the moment, because it is not clear if this is the most appropriate tool to deal with the emergency at this point in time. However, the experience of the Joint Procurement for PPEs shows that there is scope for the Commission and Member States to exchange information about national needs and planning. We believe the same results can be achieved in discussions with EFPIA members, via the I-SPOC system, so that existing medicinal stock (and newly produced one) is channeled where the need is most acute most.

For medical devices

7. *Are there any new shortages to report in medical devices, and if so, which ones?*
8. *Are you experiencing any further regulatory issues with regard to development and placing on the market of medical devices, including diagnostics?*
9. *Could you please also give an update on the development of possible new devices?*
10. *The Commission has now launched a joint procurement for protective equipment, masks, testing kits and ventilators. Which other products should be considered in future joint procurements?*

Responses provided by MedTech representatives

Single Market dimension

11. *The Commission has urged Member States to mitigate the problem of transport of medicines and devices due to borders controls. Do you still see any disruption of transport of medicines and devices across borders?*

Export bans continue to exist across the EU, however we observe a proliferation of measures having equivalent effect between Member States (such as requisitioning of medicines – example of France and Belgium). It is critically important that Member States lift any export bans or equivalent measures on medicines manufactured to meet specific patient demand within or outside EU. It is understandable that each Member State intends to ensure the availability of necessary medicines to their population. However, the consequences of export bans are directly detrimental on the availability of medicines both on the EU



market and globally, as well as risk retaliatory measures from trading partners that could impact the EU (e.g. US).

In addition, we experience bottlenecks at the Turkish, Bulgarian and Greek borders. This is mainly due to the fact that all truck drivers are put in quarantine for 14 days at border gate before entering Turkey or have to be changed into a local driver which further adds to the delays. Possible mitigation strategies could include: application of 'Green lanes' at Turkish border as well or use of a sticker or symbol to put on the trucks so that customs can single out those vehicles (they then should still present papers before passing).

12. Do problems persist in the transportation of PPEs into the EU?

Responses provided by MedTech representatives

13. Have you been able to supply PPEs for your workers? What else can the EC do to ensure their safety and safe handling of medicines?

We still receive requests from various governments to donate PPEs from our manufacturing plants to the national healthcare system, but there is almost no more scope for us to do so. Manufacturing is an intensive activity when it comes to use of PPEs for employees and our consumption is quite significant (workers work with some dangerous materials in the manufacturing process). However, we are working with national regulatory authorities to see how we can streamline even further our manufacturing operations so that the use of PPE is minimized as much as possible.



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Appendix 3

Ongoing R&D programmes (up to 6 April 2020)

Treatment developments

- [AbbVie](#) announced it is partnering with global authorities to determine the effectiveness of HIV drugs in treating COVID-19. AbbVie is supporting clinical studies and basic research with lopinavir/ritonavir, working closely with European health authorities and the U.S. Food and Drug Administration (FDA), Centers for Disease Control and Prevention, National Institutes of Health and the Biomedical Advanced Research and Development Authority to coordinate these efforts.
- [AstraZeneca's](#) Research and Development (R&D) teams have also been working expeditiously to identify monoclonal antibodies to progress towards clinical trial evaluation as a treatment to prevent COVID-19. More than 50 virology, immunology, respiratory, and protein engineering experts across research, clinical, regulatory, and manufacturing are placing the highest priority on developing a treatment to minimise the global impact of the disease.
- [Bayer](#) is cooperating with governments and health authorities worldwide to provide them with available stock of Bayer products that have indicated early signs of potential efficacy in treating patients with COVID-19, including Resochin® and to support clinical trials on further testing. Bayer has also joined forces with other manufacturers in the COVID-19 Therapeutics Accelerator Initiative, initiated by the Bill & Melinda Gates Foundation, thereby opening up our vast compound library to find and develop effective novel compounds against COVID-19. Bayer also responded to the European Innovation Medicine Initiative's call for the "Development of therapeutics and diagnostics combatting coronavirus infections" with an in-kind contribution covering the screening of a molecular target against the Bayer substance library.
- [Boehringer Ingelheim](#) immediately identified the areas of expertise, where we can best contribute to developing therapies for COVID-19 in close collaboration with academic researchers, international institutions and others in the pharma industry. Boehringer Ingelheim has joined a fast track call for project submissions to develop therapies and diagnostic tools initiated by the Innovative Medicines Initiative (IMI) of the European Union to accelerate the development of potential therapies for COVID-19. Boehringer Ingelheim is working to develop neutralizing antibodies against the SARS-CoV-2 spike protein. In addition, we are investigating our existing pipeline and in-market compounds as well as compounds from former HIV and HCV research activities. Furthermore, Boehringer Ingelheim is conducting a computational screening of its entire molecule library of more than one million compounds with the aim of identifying novel small molecules with activity against the virus.
- [Eli Lilly](#) and AbCellera (Canadian biotech firm) have entered into an agreement to codevelop antibody products for the treatment and prevention of COVID-19. The collaboration will leverage AbCellera's rapid pandemic response platform, developed under the DARPA Pandemic Prevention Platform (P3) Program, and Lilly's global capabilities for rapid development, manufacturing and distribution of therapeutic antibodies.
- [EFPIA is working with the Innovative Medicines Initiative \(IMI\)](#) on potential actions to support collaborative research programs in order to fast-track the development of therapeutics.
- [Gilead](#) has initiated two Phase 3 clinical trials of remdesivir in countries with high prevalence of COVID-19. The company is also supporting two Phase 3 trials in China and a global Phase 2 trial led by the U.S. National Institute of Allergy and Infectious Diseases. Gilead donated drug and provided scientific input for these studies. Gilead has provided remdesivir to physicians for compassionate



use to treat several hundred severely ill patients with confirmed COVID-19, and has accelerated manufacturing of remdesivir at risk, in anticipation of potential future supply needs.

- [GSK](#) is entering into the new collaborative research effort, the COVID-19 Therapeutics Accelerator. The aim of the Accelerator is to bring pharmaceutical companies and expert academic institutions into coordinated research programs, with the aim of bringing the most promising molecules forward that could be used to treat cases of COVID-19. GSK will contribute by making available compounds from its libraries for screening for activity against COVID-19. In addition, GSK is evaluating its marketed pharmaceutical products and medicines in development to determine if any could be used beyond their current indications in response to the pandemic. Further, GSK is evaluating options to make available specialised laboratory space to help in research and testing of COVID-19. On 6 April 2020 GSK announced that it has entered into a collaboration with Vir Biotechnology to find coronavirus solutions. Vir Biotechnology is an immunology company based in San Francisco and our collaboration is focused on accelerating existing and identify new anti-viral anti-bodies that could help as therapeutic or preventative options to help address the current COVID-19 pandemic and future outbreaks. This includes two promising antibody candidates and, subject to regulatory review, we plan to proceed directly into a phase 2 clinical trial within the next three to five months.
- [Johnson & Johnson](#), Janssen is undertaking ongoing work with global partners to screen a library of existing antiviral molecules, with the aim of identifying compounds with promising antiviral activity against the novel coronavirus, SARS-CoV-2 (also known as 2019-nCoV). We are working to identify existing or new compounds with antiviral activity against SARS-CoV-2 that could contribute to providing immediate relief to the current outbreak. This work is being conducted in partnership with the Rega Institute for Medical Research (KU Leuven/University of Leuven), in Belgium.
- [Merck](#): As part of the global effort to investigate potential therapeutics for COVID-19 and Merck's support of independent research, Merck recently donated a supply of interferon beta-1a (Rebif®) to the French Institut National de la Santé et de la Recherche Médicale (INSERM) following a request for use in a clinical trial. The trial is sponsored by INSERM and its launch has been announced by the French Health authorities on March 11.
- [Novartis](#) announced that it has entered new collaborative research efforts such as the COVID-19 Therapeutics Accelerator, coordinated by the Bill & Melinda Gates Foundation, Wellcome, and Mastercard, as well as a COVID-19 directed partnership organized by the Innovative Medicines Initiative. Novartis is contributing by making available several compounds from its libraries that are considered suitable for in vitro antiviral testing. In addition, the company is rapidly evaluating other existing products to see if any could be utilized beyond their approved indications in response to the pandemic.
- [Pfizer](#) announced that it completed a preliminary assessment of certain antiviral compounds that were previously in development and that inhibited the replication of coronaviruses similar to the one causing COVID-19 in cultured cells. Pfizer is engaging with a third party to screen these compounds under an accelerated timeline and expects to have the results back by the end of March.
- [Pfizer](#) also outlined a detailed 5-point action plan to battle COVID-19. The plan includes a commitment to sharing its clinical development and regulatory expertise to support other smaller biotech companies that are screening compounds or existing therapies for activity against the virus causing COVID-19.
- [Regeneron Pharmaceuticals](#) announced an expanded agreement with the U.S. Department of Health and Human Services (HHS) to develop new treatments combating the novel coronavirus



- [Regeneron Pharmaceuticals and Sanofi SA](#) started a clinical program evaluating Kevzara, originally a drug to treat arthritis, in patients hospitalized with severe COVID-19. Kevzara is a fully-human monoclonal antibody that inhibits the interleukin-6 (IL-6) pathway by binding and blocking the IL-6 receptor. IL-6 may play a role in driving the overactive inflammatory response in the lungs of patients who are severely or critically ill with COVID-19 infection.
- [Roche's](#) Actemra was approved by China on March 5 to treat Covid-19 patients with lung complications. Roche has donated nearly \$2m-worth of Actemra to China to help the country manage the COVID-19 outbreak". Actemra has been on the European market since 2010 for treatment of several kinds of arthritis.
- [Roche](#) announced that they are working with the Food & Drug Administration (FDA) to initiate a Phase III clinical trial to evaluate the safety and efficacy of Actemra in hospitalised adult patients with severe COVID-19 pneumonia. This is the first global study of Actemra in this setting and is expected to begin enrolling as soon as possible in early April with a target of approximately 330 patients globally, including the US.
- [Takeda](#) announced that it is initiating the development of a drug to treat people infected with the novel coronavirus. The experimental drug would be derived from the blood of coronavirus patients who have recovered from the respiratory disease. In parallel, Takeda is also exploring whether currently marketed and pipeline products may be an effective treatment option for infected patients.

Source: <https://www.ifpma.org/subtopics/novel-coronavirus-covid-19-industrys-rd-efforts/> and EFPIA member company information

Diagnostics:

- [Roche](#) announced that the FDA issued an Emergency Use Authorization for its diagnostic kit cobas® SARS-CoV-2 Test, advancing coronavirus testing to meet urgent medical needs. Roche is committed to delivering as many tests as possible and is going to the limits of production capacity.
- [Takeda](#) is partnering with public entities and other pharmaceutical companies through the Innovative Medicines Initiative (IMI) in Europe to leverage collective expertise in the hope of developing diagnostics for COVID-19 as well as inhibitors to help prevent future outbreaks.

Source: <https://www.ifpma.org/subtopics/novel-coronavirus-covid-19-industrys-rd-efforts/> and EFPIA member company information

Vaccines Europe - List of projects for the development of a coronavirus vaccine (8 April)

- **CureVac** is developing a mRNA based prophylactic vaccine against SARS-CoV-2, funded by CEPI and in collaboration with CEPI. Curevac is preparing a clinical study that expects to start in early summer in Germany and Belgium. Curevac is in contact for scientific advice on this vaccine development with EMA, PEI (Germany) and with FAMHP (Belgium).
- **GSK** is supporting vaccine development by providing access to its pandemic vaccine adjuvant platform to selected institutions and companies with promising vaccine candidates. In doing this we are contributing to a coordinated effort, focusing on the most promising approaches to enable development of strong candidate vaccines for COVID-19. Access to our adjuvant technology is

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being provided through CEPI, the Coalition for Epidemic Preparedness Innovations or directly, in bilateral agreements. So far, we have announced two collaborations one with the University of Queensland and the second with Clover, a Chinese company and other collaborations are under discussion. In the pandemic flu setting, our adjuvant system has been shown to be antigen-sparing, i.e. less of the antigen is needed per dose to protect an individual than would be needed in a vaccine without the adjuvant included. If this is shown to be the case with our adjuvant system for COVID-19 vaccines, we would be able to protect more people, as less antigen would be needed per person, a crucial advantage in the case of a pandemic where high numbers of doses are needed for broad protection and manufacturing capacity is limited. **GSK allies with Inovax for COVID-19 vaccine R&D project: GlaxoSmithKline has teamed up with Xiamen Inovax Biotech to evaluate a vaccine against the novel coronavirus behind the COVID-19 pandemic. The agreement gives Inovax access to a GSK adjuvant to enhance the immune response triggered by its recombinant protein-based vaccine.**

- **Johnson & Johnson** has mobilised resources in response to the outbreak to develop a preventive vaccine candidate against this coronavirus, leveraging Janssen's AdVac® and PER.C6® technology, that provide the ability to rapidly upscale production of the optimal vaccine candidate. These are the same technologies that are used in the development and manufacturing of Janssen's investigational Ebola vaccine and are also used to construct the Company's Zika, RSV and HIV vaccine candidates. In addition, Johnson & Johnson is collaborating with regulators, healthcare organizations, institutions and communities worldwide to help ensure our research platforms, existing science and outbreak expertise can be maximized to stem this public health threat. Johnson & Johnson's efforts to expedite development and production of a vaccine are enhanced by the existing COVID-19 vaccine collaborations between Janssen and the Biomedical Advanced Research and Development Authority (BARDA), part of the Office of the Assistant Secretary for Preparedness and Response (ASPR) at the U.S. Department of Health & Human Services. On March 13, 2020, a new collaboration was announced with the Beth Israel Deaconess Medical Center (BIDMC) to support the development of a preventive vaccine candidate for COVID-19. The parties have commenced preclinical testing of multiple vaccine prospects, with the aim to identify by the end of the month a COVID-19 vaccine candidate for clinical trials.

Johnson & Johnson on 30th March announced the selection of a lead COVID-19 vaccine candidate from constructs it has been working on since January 2020; the significant expansion of the existing partnership between the Janssen Pharmaceutical Companies of Johnson & Johnson and the Biomedical Advanced Research and Development Authority (BARDA); and the rapid scaling of the Company's manufacturing capacity with the goal of providing global supply of more than one billion doses of a vaccine. **The Company expects to initiate human clinical studies of its lead vaccine candidate at the latest by September 2020 and anticipates the first batches of a COVID-19 vaccine could be available for emergency use authorization in early 2021**, a substantially accelerated timeframe in comparison to the typical vaccine development process: <https://www.jnj.com/johnson-johnson-announces-a-lead-vaccine-candidate-for-covid-19-landmark-new-partnership-with-u-s-department-of-health-human-services-and-commitment-to-supply-one-billion-vaccines-worldwide-for-emergency-pandemic-use>

- **MSD** have deep expertise in vaccines and infectious diseases. As a science-driven company that aims to address some of the world's biggest health care challenges they are carefully monitoring the situation. As an initial step, based on the information available at this time, MSD has established a team of scientists to assess internally available vaccine assets for potential to impact the COVID-19 and related viruses.



- **Pfizer** is working to advance their own potential antiviral therapies and is engaged with BioNTech on a potential mRNA coronavirus vaccine.
- **Novavax** Advances Development of Novel COVID-19 Vaccine. Vaccine candidate derived from coronavirus spike (S) protein. Matrix-M™ adjuvant expected to boost immune responses. Phase 1 clinical trial planned for late spring
- **Sanofi** announced in February 2020 a collaboration with the Biomedical Advanced Research and Development Authority (BARDA), part of the U.S. Department of Health and Human Services, to advance a novel COVID-19 vaccine candidate. Work is underway to leverage previous development of a SARS vaccine candidate using Sanofi's recombinant DNA technology. COVID-19 belongs to the same family of coronaviruses as SARS. Research materials can be produced relatively quickly for clinical testing because we have a licensed influenza vaccine based on this platform. Further, this technology has the advantage of being highly scalable, allowing Sanofi to potentially rapidly produce large quantities of the coronavirus antigen. Sanofi is also coordinating with the Coalition for Epidemic Preparedness Innovations (CEPI) and sharing its vaccine R&D experience and expertise to advance vaccine solution. Sanofi Pasteur and Translate Bio, a clinical-stage messenger RNA (mRNA) therapeutics company, will also collaborate to develop a novel mRNA vaccine for COVID-19. **Public statement [here](#).**
- **Seqirus** is providing scientific and technical expertise and its well-established MF59 adjuvant technology to the University of Queensland in Australia to help fast-track the development of their CEPI-funded n-COV19 vaccine candidate using novel molecular-clamp technology.

