Message

From: Abbott, Christopher J. EOP/WHO [redacted]
Sent: 3/2/2020 9:51:11 AM
To: Eric Edwards [redacted]
Subject: Fwd: Memo
Attachments: 01 Memo to Potus 2.0.docx; ATT00001.htm

Sent from my iPhone

Christopher Abbott
Associate Director
Office of Trade and Manufacturing Policy
The White House
[redacted]

Begin forwarded message:

From: "Ziegler, Garrett M. EOP/WHO" [redacted]
Date: March 2, 2020 at 9:44:21 AM EST
To: "Abbott, Christopher J. EOP/WHO" [redacted]
Subject: Memo

This is what Peter sent although, as you can see, there is a lot of proprietary stuff in here. I defer to you on what you cut out so you can send a revised version to Eric.

Garrett

Garrett Ziegler
[redacted]

3.1.20

MEMORANDUM TO THE PRESIDENT
THROUGH NSA O'BRIEN
FROM PETER NAVARRO
RE: MOVE IN 'TRUMP TIME' TO STAY AHEAD OF VIRUS CURVE

Since the first news from China of a viral epidemic, I forecast a *significant* global pandemic. Since that time, my focus has been on:

1. Ensuring sufficient *personal protective gear* such as N95 masks;
2. Rapidly developing a diverse set of *treatment options*
3. Cutting *vaccine development* time in half;
4. Procuring adequate *diagnostics* such as test kits and point of care devices
5. Bringing home our globalized Essential Medicine supply chains

Over the last month, I have presented the Task Force with action memos to combat the virus swiftly in "Trump Time," but movement has been slow.

There is NO downside risk to taking swift actions as an insurance policy against what may be a very serious public health emergency. If the COVID-19 crisis quickly recedes, the only thing we will have been guilty of is prudence.

This memo recommends the following **actions**. In some cases, there is already SOME movement BUT the movement is NOT fast enough.

- Industrial Mobilization of Supply Chains
- Mobilize Point-of-Care Diagnostics
- Expedite Oral Antiviral Effort
- Fast-Track Athersys and Celularity as Fourth and Fifth Treatment Options
- Bootstrap Regeneron's COVID-19 Capabilities
- **"Manhattan Project" for Advanced Manufacturing to Bring Production Onshore**

To ensure these (and additional) recommendations are implemented swiftly, I further recommend setting up a SMALL rapid response team (e.g., VPOTUS, RSA, Birkes, Kushner, Pottinger, Navarro) empowered to swiftly move such recommendations.

Approximately 30 essential generic medicines are needed to treat COVID-19 patients who become ill, are hospitalized, or are admitted to intensive care (See Appendix 1). Eleven of these include Active Pharmaceuticals Ingredients (API) that are only available from foreign suppliers, many in countries seeking to contain their own COVID-19 emergencies. Additionally, nearly all of the chemical precursors used to make the API, including precursors to manufacturing fluoroquinolone antibiotics such as ciprofloxacin, foreign-sourced, especially from China.

Accordingly, our supply chains remain extremely vulnerable; and it is urgent to immediately re-secure and mobilize our Public Health Industrial Base.

Recommendations

- Direct FDA and CDC to immediately identify the projected numbers of drug requirements by dosage form and strength based on moderate and severe COVID-19 epidemiological models for each of the necessary COVID-19 medications listed in Appendix 1.
- Direct FDA to require any current manufacturer of generic medicines to list which country makes the API and which country completes final formulation and manufacturing of the finished drug product.
- Direct VA, HHS, CDC, and Commerce to identify current hospital system, wholesaler, manufacturer, pharmaceutical, and agricultural inventory levels and surge production capacity of essential generic medicines listed in Appendix 1.
- Direct COVID-19 Supply Chain Working Group to immediately begin identifying all available Chemical Precursors and API sources for Appendix 1. Bolster and secure manufacturing capacity for essential generic medicines required for COVID-19 related illnesses.
- Direct HHS to determine a strategy among relevant buyers (including DOD, VA, and state governments) to immediately procure the generic medicines and starting materials that are unable to be manufactured in the US. This should include all Beta Lactams antibiotics used to treat COVID-19 related illnesses, any critical fluorinated starting material compounds such as those used to make Midazolam and Ciprofloxacin, and relevant opioids, including codeine.

Mobilize Hand-Held, Point-of-Care Diagnostics

People and their health care providers need to know who is infected. Currently, all diagnostics for COVID-19 are housed in public health laboratories; and it simply takes too long for patients to get results. We need a more rapid, hand-held point of care diagnostic test that can be used by less skilled medical personnel in more accessible facilities (doctor office, pharmacy, urgent care center).

Point-of-care, hand-held devices should be able to identify when a person is actively infected with nCoV and when they have safely cleared the virus and are no longer infectious. These front line diagnostics will dramatically reduce the time between diagnosis, care, and treatment. In addition, they will aid in earlier release of patients from hospital care to free limited resources.

HHS, through Biomedical Advanced Research and Development Authority (BARDA), has recently identified three technologies to expedite for development: (1) MesaBiotech; (2) Visby Medical/Click Diagnostics; and 3) Hound Labs Breathalyzer. We need to mobilize these resources immediately. They can be out in the field within 3-4 months (and possibly faster) if the following recommendations are adopted:

Recommendations

- Provide additional funding of $250 M if not already in the proposed Supplemental funding bill for HHS to accelerate the development
- Direct HHS to expedite the contracting process to immediately award contracts for development of POC diagnostics when supplemental funding available
- Direct HHS FDA to prioritize and streamline the regulatory pathway and reviews of POC diagnostics for COVID-19
- Direct HHS to prioritize the distribution of limited clinical specimens, reagents, etc. to USG contracted developers to expedite the development and delivery of medical countermeasures for COVID-19
- Prioritize development of tests that are produced in the US and rely on US-based raw materials – current technologies are located primarily offshore and pose a risk regarding accessibility

Expedite Oral Antiviral Effort

The only possible drug we have now to treat COVID-19 is REMDESIVIR. Because it must be administered intravenously, our hospitals, urgent care clinics, and other units of our healthcare system will be quickly overwhelmed if large numbers need to be treated.

This observation militates for the development of a small molecule antiviral drug delivered orally. This can be used to treat people in early stages of infection, reduce severe illness and thereby reduce the need for large numbers to enter the hospital system.

Prophylactic therapeutics, such as monoclonal antibodies can provide protection to high risk groups, including healthcare workers and emergency response workforce in absence of a vaccine. This work needs to be expedited!

The following recommendations closely track those I made for development of a vaccine. We need to do this for an oral antiviral. This process will also help strengthen the domestic supply chain.

Recommendations

- Direct HHS to further expedite the high-throughput screening of drugs from industry partners to identify drugs for activity against the nCoV.
- Direct HHS to further prioritize companies and labs under USG contract to receive virus and materials immediately to establish the screening assays to start screening immediately. (There may be a drug already available)
- Work closely with HHS and FDA to identify critical pathways to implement US-based advanced manufacturing development for human use.

In addition, WH/OMB should support HHS request for $1.9 billion for therapeutics and oral antivirals.

Fast Track Athersys and Celularity for Fourth and Fifth Treatment Options

We are moving forward with three possible treatment options: (1) Gilead's REMDESIVIR, (2) oral antivirals, and (3) Regeneron's monoclonal antibodies. A fourth treatment from Celularity appears to be worthy of the same kind of fast-tracking and support we are offering the above three options.

Celularity's CYNK-100 is an off-the-shelf, allogeneic that uses anti-tumor "attack cell" therapy under 3 open INDs. It has an excellent safety profile in 25 cancer patients and appears to have putative clinical benefits.

Athersys has developed off-the-shelf regenerative medicine technology to address multiple areas of critical care medicine. They currently have an FDA Fast Track designation for their stem cell medicine to treat Acute Respiratory Distress Syndrome (ARDS). The Athersys technology is relevant to COVID-19 and other emergent pathogens that include severe pulmonary inflammation and ARDS following infection.

Recommendations

- Direct HHS to prioritize review of Athersys and Celularity in the ongoing NIH-lead RCT for treatment of COVID-19.
- Direct FDA to expedite review of Celularity's IND 19650 Phase I/II Study and allow Celularity to modify dose level, frequency and interval. This will reduce the approval time from 30-60 days to as little as 3-4 days.
- Direct HHS to assist Celularity in gaining access to current COVID-19 sites within the US and overseas so it can engage with clinical investigators and conduct its trial.
- Provide up to $2.5 million in financial support to Celularity to offset the expense of the clinical trial and additional funds to allow for a prompt scale-up in production.
- Direct HHS to provide funding to Athersys to support expediting the Phase 3 study for ARDS.
- Direct HHS to support the scale up of the domestic production capacity for the Athersys MultiStem technology.

Bootstrap Regeneron's COVID-19 Capabilities

Regeneron's monoclonal antibody therapies are safe and effective for a number of therapeutic targets, including seven approved medicines for dermatitis, asthma, skin cancer and macular degeneration; and Regeneron's rapid antibody discovery platform was demonstrated against infectious diseases in the recent Ebola outbreak.

In the absence of a vaccine, which is many months away, Regeneron's antibodies should be expedited for development and evaluation for use as a prophylactic treatment. This approach would provide protection against COVID-19 infection for healthcare workers and prioritized emergency and critical infrastructure personnel.

Regeneron has already initiated intensive efforts to leverage its proprietary technologies and expertise to develop multiple monoclonal antibodies that, individually or in combination, may be used for short term prophylaxis and/or treatment against the emerging coronavirus.

Regeneron's VelocImmune® mice have already been immunized with the viral targets and have begun to produce antibodies against this virus. Within a few weeks, the VelociMab® technologies will be employed to allow for an unprecedented rapid transition to full scale manufacturing of these antibodies, so that the emerging threat can be met in a useful timeframe.

Regeneron plans to combine the two best antibodies it obtains – from either source – to create an "antibody cocktail" to increase efficacy, potency, neutralization, and to minimize chance of viral escape.

Recommendations

- Direct FDA to immediately expedite review of the Regeneron Ebola BLA submission. This will provide confidence on the end-to-end platform of technologies to deliver a monoclonal treatment for emerging infectious disease threats.
- Direct HHS BARDA to further expedite all contractual agreements and timelines for production, scale-up, and clinical evaluation of the Regeneron antibodies for both prophylactic and treatment options
- Direct HHS FDA and NIH to collaborate closely with Regeneron for Fast Track evaluation of their COVID-19 antibodies.
- NIH should be directed to expedite review process to include Regeneron monoclonal antibodies in their adaptive clinical trial as soon as antibodies are ready.

"Manhattan Project" for Advanced Manufacturing to Bring Production Onshore

US-based manufacturing capabilities for our most essential medicines and their Active Pharmaceutical Ingredients (API) have been critically depleted over the last several decades due to the globalization of the industry. Currently, over 85% of APIs and precursor chemical ingredients for generic medicines come from foreign supplies, primarily China.

It is a matter of economic and national security to rebuild our domestic API and pharmaceutical manufacturing industrial base. The fastest and most efficient way to do so is with continuous Advanced Manufacturing technology. This cutting edge technology is more efficient, higher quality, safer, and less costly than the methods used in China and other foreign countries and thus will allow the U.S. to become globally competitive.

Phlow is a public benefit corporation working in partnership with CivicaRx, AMPAC, and Virginia Commonwealth University to secure a manufacturing site in Petersburg, Virginia. This partnership would allow for large-scale, low-cost, reliable end-to-end production using continuous pharmaceutical manufacturing technology that can meet domestic needs for the COVID-19 outbreak while addressing longer term supply chain vulnerabilities.

HHS' BARDA is working closely with Phlow and should be strongly encouraged to immediately launch this initiative. The partnership can be up and running within 30 days and produce its first shipments of essential generic medicines within weeks.

Recommendation

- Direct HHS BARDA to immediately provide $300 million in funding to establish a public-private partnership with Phlow to accelerate domestic advanced and continuous manufacturing capabilities, as well as the infrastructure necessary to re-secure the manufacturing of APIs for essential generic medicines in the US. **This is our BEST shot for near term implementation.**

Appendix 1

Essential Drugs Needed to Treat COVID-19	
Crystalloid I.V.	
Dextrose 5% Water	Ringers
Normal Saline	
Bronchodilator	
Isoproterenol	
Salbutanol Liquid	
Sedation & Induction	
Atropine	Propofol
Fentanyl Injection	Rucoronium Injection
Ketamine Injection	Suxamethonium
Midazolam	
Anti-hypertensive	
Diltiazem Injection	Labetolol Injection
Esmolol Injection	
Pressor Agents	
Norepinephrine Injection	*Phenylephrine*
Antibiotics	
Azithromycin	Vancomycin
Ciprofloxacin	*Piperacillin*
Ceftriaxone	
Pseudonomas Coverage	
Meropenem	Zosyn
General Medications	
Acetaminophen	*Guaifenesin Capsules*
Codeine	Lidocaine Injection
Renal Support	
Bicarbonate Injection	Furosemide Injection

Items in Red are completely dependent on Foreign Sources
Items *italicized* are already on the FDA Drug Shortage List