



April 28, 2020

To: All Domestic Employees

From: Pandemic Working Group

Re: **COVID-19: Vaccines ~ CA Governor ~ Data-driven Curve ~ Farm to Food Banks**

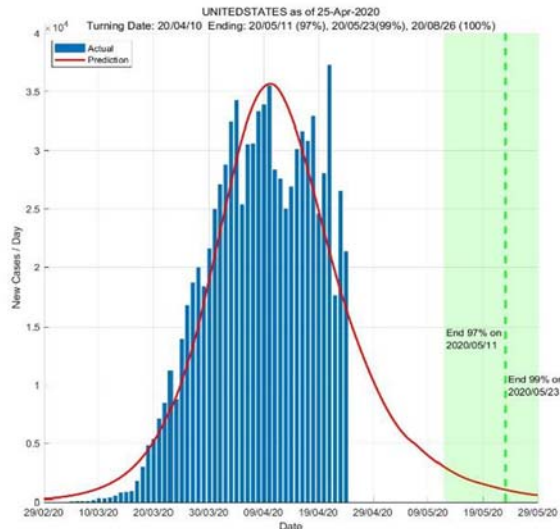
Vaccine Development Timeline. According to the World Health Organization, over 60 candidate vaccines are in development worldwide, and several have entered early clinical trials on human volunteers. Interestingly, those garnering the most press are not the ones that involve injecting weakened or dead coronavirus into patients. Rather, according to LiveScience.org, they are starting with messenger RNA – effectively a “germ’s genetic material” – to prompt human cells to build proteins found on the virus’ surface, thus triggering a protective response against the virus. This is the approach being used by BioNTech (as reported in the Financial Times) and Pfizer (from the Wall Street Journal) with the aim of manufacturing a certified vaccine in under one year. Typically, developing a potential vaccine requires the researcher to go from petri dish through animal studies (3-6 months) followed by the completion of three clinical phases, each of which takes 3-6 months: Phase 1 is a safety trial which also helps determine the dose, Phase 2 is usually done on 100-300 people and focuses on biological activity, and Phase 3 typically involves thousands of people. According to Dr. Anthony Fauci, who heads the Administration’s Coronavirus Task Force, if a vaccine candidate prompts a promising immune response in Phase 2 after passing Phase 1 safety tests, it is possible that the FDA could approve such a vaccine for emergency use before 18 months’ of development. At this stage, then, we will continue to hear about vaccine testing, but nothing will likely be conclusive for several months.

California’s Back to Work Guidance. Today, California Governor Gavin Newsom (photo courtesy of AP) outlined a four-phase plan for the state’s return to work, noting that while current public health indicators look promising, additional progress needs to be made. He stated further that neither “politics, protests nor political pressure” but, rather, data, would drive his decision-making. Phase one (not to be confused with FDA drug trials – see above) is the current stage (face coverings, social distancing). Phase two would allow select “lower risk” businesses to reopen, including curbside service, parking access limits and limited school attendance. Phases three and four are as of yet mostly undefined, but envision such things as reopening personal care businesses and eventually large



sporting events. In short, the governor continues to pursue a conservative, data-driven and methodical approach toward managing the pandemic.

Data-driven Pandemic Curves. A fair amount of attention is being given to predictions by Jianxi Luo of Singapore University of Technology and Design (<http://ddi.sutd.edu.sg>) on end-dates for COVID-19 in various countries. Using pattern analysis (acceleration, inflection, deceleration and



United States

eventual stop) informed by adaptive and countering behaviors (i.e., what's actually happening in the world) updated daily, the author posits a curve for the U.S. as indicated to the left, including attainment of 97% of cases by May 15, 2020, 99% of cases by May 27, 2020 and an end to all cases by September 5, 2020. The author submits that such models are not intended to guide governments on how to administer safety orders but, if well-informed, can serve to reduce anxiety and over-optimism. His cautious outlook is shared by Dr. Anthony Fauci who reports that, while he expects that the virus will return in the fall, he believes that we will do "reasonably well" if we have put into place countermeasures (such as vaccines and therapeutic treatments).

Farm to Food Banks. On a closing note, in case you missed the story covered by ABC last night, upon learning from news stories that, faced with pandemic-related market softness, some farmers were letting vegetables rot in the field and pumping milk into the ground, John Botti of Westchester County, New York took matters into his own hands, and, along with several friends, purchased 43,000 pounds of Idaho potatoes to be trucked into New York for donation to area food banks. Following the airing of the story, Mr. Botti has received several hundred donations for similar purchases. This story calls to mind the lament of the 80's musical group, the Police, in the hit song *Driven to Tears* – "too many cameras and not enough food, this is what we've seen." It seems to me that Mr. Botti has answered that lament. - TD

If you have any questions or comments on this advisory, please contact either kellyw@amvac.com or timd@amvac.com.