



May 13, 2020

To: All Domestic Employees

From: Pandemic Working Group

Re: **COVID-19: New Antibody Test ~ Places of High Risk ~ CA Reopening**

New Antibody Test. As reported by the Business Insider, Abbott Laboratories has announced that it is launching a new coronavirus antibody test (indicating that patient had been infected by the virus in the past) and will be shipping one million test kits this week. The kits are going to laboratories that have Abbott's test equipment (such as the unit pictured here – from Abbott's website), which can run 100-200 tests per hour. Abbott estimates that it will be able to produce 4 million kits in April and 20 million in June. CNBC reported that the FDA had granted emergency use authorization for the test kits two days ago.



According to the maker, the tests find antibodies in coronavirus-positive people 100% of the time (this is called sensitivity) and no antibodies in coronavirus-negative people 99% of the time (known as specificity). These tests look for the IgG antibody, which is produced by the body's secondary immune system and can last for months and possibly years (as opposed to the IgM antibody which is produced immediately after exposure). Granted, it is still not yet known how long IgG antibodies for coronavirus typically remain in a person, nor what level of those antibodies is needed to fend off the virus in the future. Nonetheless, if the test kits perform as specified, this is a step forward, because many earlier test kits from various sources were far less accurate. As pointed out in the New York Times today, pursuant to a concept known as the "base rate fallacy," where the rate of a test's inaccuracy (e.g., it is 80% accurate, therefore 20% inaccurate) exceeds the actual rate of infection in the population (e.g., 5%), the study results will tend to yield a far higher number of "positive" results than one might expect – in our example, for every five "positives," only one would be true, while four would be false. Extrapolating those results to the entire population would be unwarranted. In short, before proceeding with antibody testing at scale, it is important the public uses test kits that have high degrees of sensitivity and specificity, and Abbott may have produced just that.

Places Where Transmission Risk is Highest. A helpful piece by researcher Erin S. Bromage, PhD., entitled "The Risks – Know Them – Avoid Them," was picked up by the national media earlier in the week. In his article, Dr. Bromage uses concepts from immunology and infectious disease to answer the question of what to avoid during pandemic reopening. Before getting to the punch line, he asserts that, as a rule of thumb, the key to achieving infection is Dose x Time. Where

exposure (such as through sneezing or coughing) is high, risk can be high even if the time is short. However, even where exposure is low or moderate, excessive time spent will also increase the risk. His focus was largely on infection through air droplets, as opposed to “fomite” or shared surfaces.

Dr. Bromage reports that, historically, the places of greatest spreading have not been grocery stores and inconsiderate pedestrians, but, rather, meat packing plants, large family gatherings (such as weddings, funerals and birthday parties) and closely-configured workplaces (like call centers) and business conferences (such as the Biogen Conference in Boston last March). With respect to reopening, he recommends that we be cautious about indoor activities involving yelling or singing (e.g. choir practice), restaurants with tight seating and/or unfavorable air flow, and indoor group activities that have inadequate social distancing over extended periods of time (e.g., movie theaters). In summary, he recommends that, when entering the “reopening” world, we take account of the environment and make judgments based upon Dose x Time. In this vein and in the interest of protecting our employees, we continue to observe social distancing protocols at our facilities.

California Reopening: Phase 2. As reported by ABC7, yesterday, California Governor Gavin Newsom announced modifications to his stay-at-home order to allow for more businesses to reopen in the state. As you know, AMVAC has been operating continuously throughout the pandemic as an essential business within the country’s critical infrastructure. However, many other businesses do not share that status. In particular, the governor laid out the criteria for sit-



down restaurants, including disposable (or frequently cleaned) menus, no pre-set table settings, avoidance of shared salt/pepper/ketchup containers, pre-rolling utensils in napkins, requiring diners to fill their own take-out boxes, thoroughly cleaning tables and chairs after one use and no table-side food preparation. He also directed that shopping malls (for pickup only), outdoor museums, botanical gardens, car washes, and pet grooming facilities may resume operations. Governor Newsom continues to take a measured approach toward reopening in the face of what the

L.A. Times described today as a “stubborn plateau” in both confirmed cases and fatalities from the coronavirus. Above (from the L.A. Times) cyclists engaged in a low-risk activity on a path near the Queen Mary.

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