

Massive Antibody Testing Now (#MATN)

Universal Antibody (AB) Testing NOW: *is essential* for Return to Work

Although #MATN cannot begin today, if we don't (i) ramp-up and diversify manufacture now and (ii) begin organizing NOW for effective, regional roll-outs (as soon as AB tests are available), that will only DELAY return to normalcy. More details on need for AB testing are below, but right now the US is mainly doing **LIVE VIRUS** (PCR) testing, which only says "you have an active infection right now and are contagious". While Live Virus testing is crucial for medical workers, the absence of an active virus infection says NOTHING about if you've had COVID in the past OR might become infectious in the future: it does nothing for our **NEW** biggest problem: **Return to Work**.

But with antibody testing (done right, more below), you will have two main outcomes:

1. TWO positive tests: this means YOU are (very likely) immune and CANNOT infect anyone, OR
2. TWO negative tests: (tests are given 21 days apart), which means you are NOT infectious, unless someone infects YOU at some later point.

Return to Work: Visible Status Display (VSD, e.g. blue/white cards). Widespread VSD, wearing of cards, means that people WILL feel safe to go out in public. *Absent VSD*, society as we know it, will not come back anytime soon. We cannot wait 18 months to make 300 million vaccines—and we do not have to! But we need to BEGIN making tens of millions of AB tests right now. **Anyone with two "positive" AB (blood) tests**, 21 days apart, is immune and can be given a **BLUE CARD**: they CANNOT infect anyone AND they cannot be infected; they can go ANYWHERE and do ANYTHING and be safe. **Anyone with two negative tests** can be given a **WHITE CARD** and they also are SAFE as long as EVERYONE wears cards (white or blue): once you get a card you can go out in public and do anything. Absent VSD people will NOT feel safe to go out in public and we CANNOT RETURN to normalcy. We can make many millions of AB tests now and we DO NOT NEED to wait 18 months to get 300 million vaccine doses!

Why wear BLUE and WHITE cards?

Why even have VSD, i.e. visible displays of "non-infectiousness"? For a full re-opening of society, public trust is paramount! Simple, visual evidence will allay fears and eventually make large-scale public events (NFL, concerts, Mummers Parade) possible. ABSENT trust, few will resume a normal life (before 2022, iaw HSPH researcher Marc Lipsitch). But given a government-organized system of verified testing, and rapid issuance of B&W cards, then EVERYONE tested can resume ALL public activities, BECAUSE all public activities should be restricted to those with cards (more below on practical aspects). Social Enforcement, e.g. immediate 9-1-1 calls to report sightings of *the highly-contagious* in public (or less draconian measures) will help ensure high compliance so as to (i) build public confidence and (ii) contain system-violators. While lapses and glitches will occur we need to ORGANIZE NOW and begin massive AB test manufacture (details below) now so that we can begin rolling this out.

Who gets cards (AB tested) first? All medical personnel, hospital workers and first responders, should be tested & carded FIRST as each US Region launches massive AB testing programs. Next should be all the front-line workers (pharmacies, super-markets and the like) and teachers along with families in need (so they can return to work as businesses re-open). Next: everyone on unemployment so we can get them back to work! Ultimately, we need MASSIVE testing for all so that everyone feels SAFE, first for essential businesses, then for restaurants, fast-food employees, bakeries, and then bars, clubs and entertainment venues.

What if YOUR family is still WAITING for antibody testing? You can still go out with a mask for essential purposes only: this must be done in an orderly fashion and I am fine with being at the end of the queue because (A) I want colleges to re-open and (B) I do NOT want a rebound pandemic. Foreign travel and travel between states should be restricted and VSD and mask rules enforced. Once everyone or NEARLY everyone in a region has been tested, and is complying with VSD rules, things CAN get back to a new normal: we can back to work AND play!

Some Practical Matters and Manageable Issues:

In regards to antibody testing and immunity there are some key assumptions and associated issues to consider and that we expect to be manageable.

1. Immunity. Is it true that EVERYONE who has *two positive antibody tests* really is “immune”? First, by separating the two tests by 21 days (or perhaps 30), we (i) document that the infection is no longer active, and (ii) double confirm that this person had actually had corona virus and is thus immune (there is good evidence for this). Secondly, the large scale rollout of antibody testing will be contingent upon fairly extensive pilot-testing to ensure accuracy (i.e. very few false positive and false negatives) which is already in progress in Calif. and other locations. No test is perfect so there will be some “bleed through” (so to speak) and so the anti-virus antibodies test will not be 100% accurate. But if the test is 99% effective then such additional corrective measures as “monitoring, re-testing of suspect individuals and contact-tracing” become MUCH more feasible as does medical care. Clearly, it is better to have hundreds of case vs. tens of thousands: **people will feel much better about going out if follow-on (i.e. resurgence) infections occur only rarely**, and hazards similar to a “normal flu season”. While “re-infection” is possible, given that 100 or so cases were reported in South Korea, they tested more than 100,000 people, so 100 is a tiny rate of either re-infection, or an alternative interpretation, these few cases might have been incorrect (i.e. false positive) earlier tests, making the test’s accuracy equal to 1 out of 1000, i.e. 99.9%-- not too shabby!

NEW: Joseph Fair, Virologist, NBC News Contributor, 4/14/20: While it can take several weeks for your body to make the different antibodies it needs (IgM, IgG), once those are made you should have immunity. The antibody tests are intended to confirm such immunity.

2. The Herd Immunity Delusion. We have pretty good “herd immunity” against measles, rubella and chicken pox via our national vaccination programs, but this requires a vaccine! It is astonishing to see learned, serious commentators mentioning *Herd Immunity* in reference to the CORVID pandemic. While it is true that the US population might come to have actual *Herd Immunity*, this only happens if a LARGE majority of Americans have BEEN infected. The harm/costs of that would be staggering. Right now we have over 30,000 deaths amongst 600,000 cases, for a death rate of 5%. But because of limited testing, there might actually be 6 million cases, making the true death rate 0.5%, which is still a massive fatality rate. If we let 300 million Americans become infected (aka Herd Immunity) that means 1.5 million deaths. This is NOT conducive to **Return to Work**. Antibody-testing, coupled with VSD (Visible Status Display) means that potentially infectious people are not allowed to roam freely amongst the BLUE and WHITE card populations. This is how Ebola was contained: identify and quarantine, but it had not spread throughout the entire US and was not killing 2000 Americans a day. We need #MATN – massive antibody testing now!

3. Ramp-Up and Roll-Out In Regional Powers We Trust

(And the National Board of Governors / **NBC**, hopefully).

As this plan was being formulated, coalitions of states were already self-organizing, in general terms (West Coast coalition; Tri-State Area + Pennsylvania), but such regions should be planning to implement #MATN programs as quickly as possible. Some fairly extensive AB testing is ongoing in

Calif, while Massachusetts is also looking into AB testing. But absent visible display of SAFETY / VSD, human psychology (for most) will be against returning to public arenas: this will stifle any economic recovery, businesses will continue to fail, and more families will starve. Such escalating costs will vastly outweigh the cost of a national antibody testing regime: testing will cost FAR LESS than the \$2 trillion emergency relief already implemented: the AB tests are CHEAP and require a simple pin prick at home (no blood draw!) and provide rapid results. Moreover, many employers will WANT their employees tested and be happy to pay for that as it is WAY cheaper than bankruptcy, lawsuits and shutting down the meat-packing plant again!

We will need planning and organization to (i) produce and deliver tests, (ii) collect results, (iii) issue BLUE and WHITE cards and (iv) otherwise administer this program. It need not be complicated: it does need to be easy, effective and quickly disseminated. Given incoherent federal actions, and also given the scope of the problem, regional roll-outs, e.g. a New England coalition, are needed. They could begin planning NOW and roll-out massive testing ASAP, with some broad piloting in advance of the arrival of the first big test-shipments. The NBG could create a panel to try and coordinate a region-by-region ramp-up of MATN and also help to implement follow-on campaigns in states whose epidemics are continuing: REGIONAL programs can be implemented at the same time that regional death-rates are in very substantial decline (so that the medical community has a chance to reconstitute before any resurgence). By meshing Return to Work plans with #MATN, we can strictly contain any resurgence and AVOID the rebound epidemics that are now popping up around the world. **If, by September, very large swaths of the US are dominated by card-carrying antibody-testees**, this means that (i) any small outbreaks that do occur can be quickly contained and traced and (ii) that some return to normalcy MIGHT be possible. **If we act NOW.**

4. Reasons for both BLUE and WHITE Cards. Blue Cards, by virtue of their immunity, can take on more dangerous exposures. White Card carriers should remain vigilant, especially as we begin to ramp up VISIBLE SURETY signs (visible covid status). But once we have MATN program and mandatory card display, then EVERYONE can be safe. What about cheaters or skitters? If you see someone without (i) a card or (ii) a mask and they go in amongst the regular public, especially the WHITE cards, then such scofflaws MIGHT be infecting and KILLING people, both directly and also via the contacts of people that they expose. Such scofflaws should be subject to public scorn, shunning and should be reported to police (9-1-1 because they are creating life and death emergencies wherever they go). Initially, the WHITE cards should wear masks, but once we are near 100% VSD status (all BLUE and WHITE cards in public), masks will no longer be needed. THEN you can go to Hazel's Bakery and bars and NFL games.

What About: A Negative, then a Positive test? You've likely contracted COVID, hopefully a mild or asymptomatic infection. Do a third test, 21 days later: should be positive → BLUE card!

What If: Positive, then Negative? Likely a faulty test. Retest in 21 days, also report to State.

Can we get by with ONE test? Not ideal for White Cards. Perhaps with Blue cards as numbers of active infections plummets; maybe eventually for White cards too. Certainly not yet!

Historical Note: Summer Kagan was the first White Card.