

## House Select Committee on COVID-19 Economic and Financial Preparedness

Testimony by Dr. Tim Brown, Senior Fellow, East-West Center

April 13, 2020

### The risks of reopening with blinders on

Let me start by thanking you for the opportunity to provide input to this committee. Dr. LaCroix has addressed the economic components surrounding your deliberations. I will focus on the issues of establishing the pre-conditions for relaxing the statewide shutdown, namely, having the capacity to rapidly test suspected cases, trace their close contacts and quarantine them to stem the growth of the epidemic. In addition, we must have data to inform triggers for re-imposing lockdowns should the epidemic surge.

Let me start, speaking as a modeler, to address the consequences of the measures currently in place, namely the travel restrictions, the stay-at-home order and the social distancing requirements. For the most part, I do believe they have had the desired effect. We are still seeing comparatively slow growth of hospitalizations and deaths, remaining well within our health system's capacity. Because this virus usually manifests with symptoms in less than 2 weeks, if the virus were widespread in the community, these numbers would be growing more rapidly.

The worry I have is that because these social isolation measures have been so effective, only a small fraction of the population has contracted the COVID-19 virus so far and recovered from it. Based on experiences with other coronaviruses, these people are likely to have some measure of at least temporary immunity to reinfection. However, the rest of the population, the other 99.9% of us are still as vulnerable to infection as ever.

This virus spreads easily and quickly. In the absence of controls, each person infected transmits the virus to 2 or 3 others, usually within a period of several days and sometimes before they even develop symptoms. If we were to lift the shutdown measures now and go back to our previous way of life, we could easily find ourselves in a New York type situation within a month or two. The growing cluster at Maui Memorial illustrates the potential of a handful of infections spreading rapidly in an island setting. Singapore, which has aggressively tracked this epidemic, has seen clusters of infections around workplaces, gyms, pre-schools, shipyards, private functions, churches and dormitories. It spreads easily and rapidly if people aren't taking precautions.

Thus, as we lift the restrictions, unless we are prepared to see this epidemic take off again, we will need to identify new infections promptly, trace their close contacts, and get those people into isolation as quickly as we can. This creates pre-conditions for lifting the shutdown: we must have a solid testing and contact tracing program in place, and we must have the ability to ensure isolation of close contacts of coronavirus cases from the community for the 14-day incubation period. If we reopen without these programs in place, we're wearing blinders and piloting a leaky boat as we fight a deadly virus.

### Requirements for a testing system to contain viral spread

If we are to effectively reduce the likelihood of increased community spread as restrictions loosen, we must be operating from a clear, real-time picture of what the virus is doing. This will give us the ability to reimpose restrictions if needed to arrest community spread.

This requires that our systems allow action to be taken on the times scales of the virus. The average incubation period of this virus is between 5 and 14 days; there is also evidence of the virus being

transmitted a day or two before symptoms occur. In addition, there is normally a delay between the onset of symptoms and treatment seeking or hospitalization, which is when the person receives a coronavirus test. If we add to this a several-day delay in getting testing results, we have given the virus ample time to spread and our picture of the epidemic is badly out of date.

If we are to get ahead of the virus, our testing system needs to have the following features:

- **Rapid turnaround.** We should be moving to point-of-care rapid tests or quick turnaround lab tests returning results within 24 hours. We recognize this will be gated by testing system and kit availability.
- **Local testing.** The system must shift from a dependence on mainland test labs that have multi-day turnarounds. These reduce our ability to separate a surge in coronavirus from an outbreak of flu or another respiratory illness. Additional local laboratory capacity should be identified or developed.
- **Ample capacity to support multiple needs.** The needs include diagnosis, testing of close contacts, testing of health care workers and other symptomatic front-line workers at businesses, and support of extensive surveillance of all cases matching a coronavirus case definition.
- **Metrics for testing.** In my experience systems do not improve unless there are clear metrics for performance. A system of metrics should be designed and made available in a publicly accessible dashboard. Some such metrics might include average time from sample collection to reporting of the test result for contact tracing, average time for a diagnostic test to return a result to the physician, or percent of tests done locally in Hawaii. I'm sure others can come up with additional metrics of value.

It should be noted that we are not talking about a temporary surge in lab capacity here, we will need sustained capacity. This virus will probably be with us until a vaccine is developed, that is for one or two years, and we must have the ability to monitor it carefully through that entire time frame.

### **Building stronger contact tracing capacity**

Testing without action accomplishes nothing. Every test should be tied to an action, whether to improve health care for the individual, to identify those individuals whose close contacts must be urgently reached, or to provide the public a clearer picture of the epidemic in Hawaii. Our contact tracing system needs to be strengthened significantly to ensure:

- **Rapid interviews.** Every diagnosed patient or detected infection must be interviewed for contact tracing promptly. Again a 24-hour standard should be the ultimate goal.
- **Adequate staffing to reach all close contacts.** Enough staff are needed to conduct the initial interviews, reach close contacts for quarantine, ask other potential contacts to self-monitor for symptoms, and follow-up on the quarantines and self-monitoring. This capacity must exist across the islands.
- **Transparency and openness with the public.** Contact tracing serves not only to identify additional cases, but also provides information about clusters of infection. The public needs to be aware of these clusters so that they can better understand transmission in the community and take steps to protect themselves. Recent mentions of clusters around families, church groups and biker gangs need to be made public knowledge. Not by naming the specific groups or locations, but by letting the public know the types of settings where the virus is spreading.
- **Metrics for contact tracing.** As with testing there should be metrics available in a public dashboard. Some might include days between receipt of diagnostic test result and interview,

average number of close contacts per person, or average close contacts reached per contact tracer.

The staffing needs here should not be underestimated. In Singapore, the first 108 cases identified over 3000 close contacts, 29 per person. Keeling and colleagues using social survey data estimated there might be 36 close contacts per case in the UK using a 2-meter/15-minute definition. It would be valuable to examine the Hawaii contact tracing data to estimate the average number of contacts and use this in combination with a time-to-trace standard to identify staffing needs and expand staff accordingly.

Electronic technologies can serve two key support roles in contact tracing and isolation. First, they can help to monitor and enforce quarantine requirements. Second, they can be used to allow easier identification of close contacts for contact tracing purposes. Several systems for identifying contacts exist or are under development including one from Google and Apple, the TraceTogether app in Singapore and the Private Kit: Safepaths app out of MIT. These systems are all striving to address privacy concerns while making it easier to reach close contacts promptly.

### **Public buy-in for strong prevention is another pre-condition for loosening restrictions**

One additional pre-condition for lifting the restrictions is that strong ongoing COVID-19 prevention efforts are in place and widely accepted by the public. These will include:

- **Availability of PPE supplies.** There must be enough personal protective equipment to cover all health care workers and other front-line workers in Hawaii. Once supplies are adequate for these essential workers, every effort should be made to ensure adequate surgical masks are also available for the public as soon as possible. These are far more effective than the cloth masks recommended now and should become the standard in all public settings.
- **Public buy-in to the need for continued social distancing.** A major publicity campaign should be undertaken to explain to the public why social distancing, use of masks and avoiding crowds need to remain the norm after the stay-at-home order is lifted. The trust of the public will be built by enlisting them as an essential component of the response, not by heavy handed enforcement of policies they do not understand. Transparency and openness about ongoing infections and observed clusters of infections can help to build the public's willingness to continue these practices.
- **Continued protection for kūpuna and those at risk.** Given the multigenerational family structures in Hawaii, special efforts must be taken to ensure that people understand the need to protect their family and friends who are at risk. It is not enough that those at risk stay isolated, but other family members must take steps to avoid transmission in households. Extending work-at-home opportunities for those at risk or their family members could contribute greatly.
- **Workplaces and businesses ensure social distancing.** Finally, workplaces and businesses should take steps to make it easier for their employees and customers to maintain their social distance. This may involve reducing the number of clients, physically reorganizing workspaces or customer spaces, or making hand sanitizer readily available on site.

Hawaii's geographic isolation and its willingness to act early against COVID-19 have given us a unique opportunity to make test, trace and isolate work. But to be successful, we must be proactive not reactive. We must move on the time frames of the virus, not the time frames of a bureaucracy. If we put these systems in place, we can easily satisfy the additional requirements for reopening of declining cases and adequate hospital capacity. However, if we don't move with a sense of extreme urgency to strengthen our testing and contact tracing systems, the virus will get ahead and we won't be able to catch up.