Crush the Curve
Urgent Steps Hawai‘i Can Take to Contain the Covid-19 Pandemic

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Summary

In order to contain the Covid-19 pandemic, which will not only save lives but is necessary to restart the economy, Hawai‘i needs to redouble and accelerate its public health response. In addition to better physical distancing, the state government needs to:

- Significantly increase testing for SARS-Cov-2, the causative agent of Covid-19 disease;
- Augment its contact-tracing capacity by adding significant personnel;
- Isolate every individual who tests positive in hotel rooms at government expense. Hotel capacity should also be deployed to house front-line, at-risk workers and other groups of especially vulnerable persons.

Instead of following the overly cautious recommendations of U.S. authorities, Hawai‘i should emulate regional governments like South Korea, Taiwan, Singapore, Hong Kong, and New Zealand, which have at least initially contained the virus through aggressive public health responses.

Introduction

In confronting the Covid-19 pandemic, Hawai‘i has both weaknesses and strengths. Among our vulnerabilities are continued flight connectivity to numerous hot zones, an economy dependent on tourism, an aging population, and large, multigenerational households. Yet Hawai‘i also brings advantages to the field: geographic isolation and tourist/military infrastructure. The emergency housing capacity of hotels is particularly important.

The key to successfully containing Covid-19—to saving lives and gradually restoring economic activity—is to press our advantages and mitigate our weaknesses.
Introduction Continued

Containing the virus requires not a novel policy approach but implementation of traditional public health practices. We must first redouble our efforts to reduce the rate of infection, to flatten the curve, largely through physical distancing. Simultaneously, we need to augment and accelerate our use of diagnostic testing, contact tracing, quarantine of the exposed, and isolation of the infected. These necessary, near term actions will require substantial new personnel and widespread use of the state’s idle hotel capacity.

Although Hawai’i has not yet experienced an exponential surge of hospitalizations and deaths, this is no time for complacency. In response to the novel coronavirus threat, governments around the world have acted boldly and with unprecedented haste. Yet most everywhere they have acted too late and done too little. Because of its asymptomatic transmissibility, Covid-19 is an illness than punishes prudence.

If Hawai’i is to have a decent chance of making it through this first wave of contagion and additional waves to come, we need to take concerted action immediately. We need to look to the Asia-Pacific nations that have shown preliminary success. These include South Korea, Taiwan, Singapore, Hong Kong, and New Zealand, countries that have imposed wide-ranging restrictions on arrivals from abroad and aggressively deployed every public health technology at their disposal. Despite promising efforts, Hawai’i has not yet adopted best practices to confront Covid-19. If we wish to avoid catastrophe, we must do so.

First Steps

Since the World Health Organization began tracking an outbreak of unusual respiratory infections in Wuhan, China in late December 2019, Hawai’i has acted more assertively than many U.S. states. On March 5, 2020, Governor Ige declared a state of emergency and soon after closed public schools. Preceded by the mayors of Maui and Oahu, the governor issued stay-at-home orders on March 25, and the next day instructed all visitors to self-quarantine for 14 days—a restriction on domestic travel not imposed anywhere else in the United States.
Although testing everywhere in the United States was marred by error, mismanagement, and delay, Hawai‘i’s diagnostic capacity has steadily increased, with more than 20,000 tests conducted by April 15. In per capita terms, this puts Hawai‘i in the top tier among U.S. states—though still far short of what is needed to understand the full scope of infections, their epidemiological patterns, and the variable course of the illness.

Comparatively early action by state and local government—combined with Hawai‘i’s geographic isolation, public cooperation, and perhaps a little luck—have prevented countless infections and many deaths. Closures and isolation have also bought Hawai‘i time. At this early stage of the pandemic, Hawai‘i has a vital opportunity to slow the virus and perhaps even to contain it. We must not squander it.

To fully contain the outbreak, we must continue working our way through the public health playbook. We have to deploy practices that have proven effective against every pandemic since 1918. These include four basic efforts, which have to be undertaken in concert and in haste:

1) Slowing the pace of infection through physical separation;

2) Diagnosing new cases and analyzing patterns of contagion;

3) Investigating the social interactions of each infected person in order to find new cases and prevent new infections;

4) Quarantining front-line workers and especially vulnerable individuals and isolating everyone infected with SARS-CoV-2, regardless of symptom presentation.

Thus far, Hawai‘i has taken assertive action in only two of these areas, social distancing and, belatedly, testing. If we are to contain the virus, we must also undertake comprehensive contact tracing and strict quarantines. If Hawai‘i leaders take a wait-and-see approach, they do so at our peril.
Research Approach

This report urges swift, concerted implementation of the basic practices of public health: physical distancing, testing, contact tracing, quarantine, and isolation. We have devised these urgent recommendations based on a survey of emerging scholarship on public policy responses to Covid-19 and also on interviews with UH researchers and state government and community experts in a variety of fields: epidemiology, public health, virology, geriatrics, primary care medicine, biology, economics, law, history, and political science. When possible, we have also consulted with public officials, community leaders, and private-sector experts to check our assessments and to ensure that our recommendations are viable. We have consulted widely, but all the ideas offered here are our own and in no way speak for any other individuals or for the University of Hawai‘i. This is a dynamic crisis, and these recommendations are based on incomplete knowledge. They represent our best effort but are by no means final or definitive. Most of these ideas are not new, but we hope state and municipal decision makers will find it useful to have them in one report.

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Recommendations

- Physical Distancing
- Diagnostic Testing
- Contact Tracing
- Quarantine and Isolation
Physical Distancing

Because so little is known about this novel pathogen, the best way to limit its spread is for people to stay apart. Epidemiologists and clinicians believe that most cases of Covid-19 are mild, but severe cases have already caused hundreds of thousands of hospitalizations and more than 125,000 confirmed deaths worldwide. Slowing the growth rate of infections is therefore essential to save lives and avoid overloading the health care system. Unless Hawai‘i maintains and improves compliance with stay-at-home orders, Island residents will continue to experience infection, hospitalization, and death.

Following the lead of municipal authorities, state government have imposed a variety of facility closures and stay-at-home orders. Island mayors have experimented with nighttime curfews, beach and park sweeps, audio warnings from drones, and police checkpoints. In just a month, we find ourselves working from home and sheltering in place, decreasing non-essential transportation, fabricating and wearing masks in public, avoiding public congregation, and interacting with many loved ones only on screens. Thus far—and at considerable sacrifice—Hawai‘i has risen to this historic occasion.

In order to slow the rate of infection, however, experts agree we need to do more. Aggregate traffic data shows that Hawai‘i drivers have reduced their daily driving distance and non-essential stops by 55-70%, but this may be insufficient to arrest community spread. To encourage better compliance with stay-at-home orders, local and state authorities should judiciously intensify enforcement while also endeavoring to maintain public trust.

Next steps:

1) Launch a multi-platform public education campaign, funded by state and local governments and supplemented by philanthropy, to underscore the importance of physical distancing. Attention should be directed to local minority languages and target populations less easily reached by national media.

2) Focus police resources on activities most likely to result in infections, e.g., non-essential congregate worksites and social gatherings. Authorities should strive for enforcement that is visible yet selective, logical, and restrained.

Hawai‘i has risen to this historic occasion. Yet experts agree we need to do more.
Physical Distancing Continued

3) Use vacant hotel space, at government expense, to provide single-room or family-unit accommodation for at-risk persons, including residents of long-term care facilities who do not require constant care, as well as elderly inmates on compassionate release.

4) Substantially reduce the inmate populations in state and local corrections facilities with the aim of providing single-cell housing for the duration of the outbreak.9

5) Increase temporary housing for individuals and families without homes. To avoid becoming incubators of infection, these facilities must allow sufficient space for sleeping and eating at safe distances. They must provide for adequate hygiene and adequate security. Hotels in some instances can provide temporary emergency housing.10

6) Streamline and scale up, at government expense and with philanthropic support, programs to provide individual hotel accommodation to front-line, at-risk workers, including health care workers and first responders. Front-line workers are standing up for all of us, and we should have their backs.

Diagnostic Testing

The consensus of public health experts is that Covid-19 cannot be contained—and therefore economic activity cannot return to anything like normal—without a dramatic increase in testing.11 Diagnostic testing on a different order of magnitude is imperative for a variety of reasons:

- It will allow us to identify and isolate asymptomatic and mildly symptomatic persons, who can unknowingly infect others.
- It will help us protect vulnerable state residents, as well as health care workers, first responders, and essential employees.
- It will enable us to more accurately assess the spread of the disease and model its future, providing critical information to policy makers.
- It will facilitate epidemiological and clinical research on the disease, helping us better understand symptom presentation, patterns of transmission, variable demographic impact, and interaction with comorbidities.
Public officials have advised us all to wear masks, not blindfolds. Without testing, we cannot see how this epidemic is unfolding, and we cannot mount a robust response. Our recommendations:

1) Increase the pace of diagnostic testing. Because we know that SARS-CoV-2 can cause mild symptoms or even no symptoms at all, Hawai‘i needs to loosen criteria for testing. As test kits, swabs, personnel, and PPE become more available, health officials should ramp up testing in several areas: (a) among individuals with milder symptoms, like loss of smell or a light cough; (b) among especially vulnerable populations like nursing home residents; and (c) among at-risk essential workers, including prison guards, first responders, health care workers, nursing home staff, grocery and pharmacy employees, and restaurant and delivery workers. In order to determine the extent of community spread, Hawai‘i also needs to undertake enhanced surveillance testing, especially among in populations with higher rates of poverty and morbidity.

2) Designate a single, high-ranking public official to take charge of the state’s overall testing effort. This official’s team should identify any obstacles to increased testing (e.g., equipment supply, lab capacity, personnel shortages) and work directly with the governor and state and federal emergency officials to clear them.

3) Collect, centralize, and release more granular data on testing subjects and results. Health authorities elsewhere have demonstrated that it is possible to safeguard individual privacy while sharing detailed case data. Regularly posted information on both positive and negative tests should include, in anonymized form: ethnicity, gender, age, symptoms, and more precise residence information—with variables added as the research evolves. To the extent that disclosures of such information is prohibited under current privacy regulations, authorities should invoke emergency powers for the purposes of epidemic control.

If funding or staffing are needed, they should be provided, through activation of additional National Guard units if necessary and, later, through emergency hires.
Diagnostic Testing Continued

Are Native Hawaiians, who suffered catastrophic loss of life in epidemics over the course of two centuries, suffering greater rates of infection and mortality than other population groups, as are African Americans on the continent? We don’t know because we lack basic information.

Contact Tracing

The basic detective work of public health is contact tracing. This involves gaining the trust of individuals who test positive and working with them to map their recent movements and communicate with their close and prolonged contacts. The aim is to identify exposed and infected persons, so that they too can be tested and isolated, and the chain of infection can be broken.

Contact tracing for Covid-19 presents challenges because the disease can be asymptomatic or mildly symptomatic and also quite contagious. Accordingly, contact tracing for this pandemic requires hard work, long hours, phone calls, site visits, and regular follow up—every step multiplied by a case load that can increase exponentially. Contact tracing is resource and personnel intensive. Yet without comprehensive contact tracing, the pandemic cannot be turned back and businesses will remain closed. Without contract tracing, more of us will die. Our recommendations:

1) Rapidly and substantially increase personnel assigned to contact tracing. Hawai‘i’s emergency staff at DOH and HI-EMA are working overtime, but they cannot possibly keep up. In the short term, National Guard units and reassignment of idled state workers could close the gap, but coping with this disease over many months will require a large pool of new employees, numbering in the hundreds. To put this in perspective, a former director of the CDC estimates that to match China’s effort, the US would have to deploy 300,000 contact tracing employees in short order.14

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Contact Tracing Continued

2) Take advantage of new technology and large data sets to supplement traditional contact tracing. In pursuit of private profit, big technology companies have been aggregating and selling our location and contact data for years, but public health bureaus have been slow to adopt new tools for public good. Extensive contact tracing will be expensive, but we must build out our public health infrastructure if we are to make it through not just this round of contagion but the next. Until widespread vaccination, effective treatment, or antibody tests present other pathways, traditional public health practices are our only way forward.

Two possibilities:

a) Encourage residents and travelers to install an existing Covid contact-tracing app on their personal electronic devices. In South Korea, Singapore, Taiwan, and elsewhere, personal apps have been used successfully to notify exposed individuals, rapidly identify new cases, and advance research.

b) Health authorities in several afflicted countries have also taken advantage of large private datasets to assist with contact tracing, including cellphone GPS data. Immediate action at the state level could be challenging in this arena, but state health authorities and the AG’s office should draft plans and open discussions with technology companies about data sharing and contact notifications.

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Quarantine and Isolation

The last tools in the public health box are quarantine and isolation. These are tried-and-true responses to emerging infectious diseases, developed first in the 14th century and used effectively against recent outbreaks of SARS, MERS, and Ebola.18

Hawai‘i has so far taken halting steps to isolate the infected and quarantine the potentially infected. All visitors arriving to the islands are required to self-quarantine for 14 days, and individuals who test positive are asked to do the same. This has led to a dramatic drop in daily airport arrivals, but enforcement for travelers who do arrive has been spotty—this despite grave risk.

In China, epidemiologists concluded that most transmissions occurred through close, prolonged contact with symptomatic individuals and that most clusters of infection originated in families.19 This finding suggests special risks for Hawai‘i because of our high proportion of large and multigenerational households.20 In Hawai‘i, advising someone who tests positive to self-isolate at home often means putting vulnerable family members at risk.

We can do better. Although Hawai‘i’s household structure presents vulnerabilities to Covid-19, we also have one great asset at our disposal: more than 50,000 full-service hotel rooms, most of them currently empty.21

Our recommendations:

1) Provide free, voluntary isolation for anyone who tests positive for the full course of illness.22 State authorities should seek federal assistance to cover costs but should guarantee funding so that hotel isolation can begin without delay. Prices, meal delivery, and work conditions should be negotiated both with hotel management, using federal lodging and per diem rates as a starting point, and with hotel worker unions, so that employees have a voice in determining staffing levels, cleaning schedules, benefits, and use of protective equipment.

2) Strengthen quarantine provisions for all arrivals to the islands, with exceptions only for workers essential to the Covid response. Every traveler arriving in Hawai‘i, resident or non-resident, should be required to submit to supervised quarantine in hotels at their own expense for 14 days.

To balance public safety with compassion and flexibility, there should be exception for residents who can prove they have the ability to truly self-isolate at home without placing any household members at risk. There should also be assistance for residents who can demonstrate financial hardship.
Conclusion

Implementing the above recommendations in short order will not be easy. But experts in a range of fields agree these are necessary steps to contain the outbreak, and prerequisites for resuming economic activity.\textsuperscript{23}

Aggressive application of traditional public health practices can also buy us still more time: more time for treatments to evolve, equipment and supply shortages to be resolved, antibody tests to become widely available, and vaccine development to proceed. More time to address social problems that endanger us all, like homelessness, prison overcrowding, health insurance gaps, and lack of employee sick leave. Robust intervention now will save lives and also better position Hawai‘i for recovery.

In developing this briefing, we have considered alternative viewpoints, and we would like to address two counterarguments here:

- **Cost:** With the collapse of tourism and much of the service economy, state revenues will decline markedly in the coming months.\textsuperscript{24} This will indeed present long-term challenges, but now is not the time to shortchange our emergency response. Although Hawai‘i’s state budget rules require expenditures to match revenues, there are exceptions allowed for emergencies, and this is indeed an emergency. Austerity across the board will only worsen the crisis, most economists agree, and this is particularly true when interest rates and inflation are low, federal relief dollars are in the pipeline, and the Federal Reserve is promising to buy state debt.

- **Caution:** Since Hawai‘i has not yet experienced an exponential growth of cases, we might conclude that our efforts thus far have paid off and that we should pause before taking additional steps. But delay poses a real and present danger. There is no human immunity to SARS-CoV-2. There is no proven treatment. The virus has spread rapidly, yet only a small portion of the world’s population has so far been infected, which means that almost everyone on Earth remains at risk. We can therefore predict additional waves of infection. Until a vaccine can be administered widely, Covid-19 will continue to pose a threat in Hawai‘i and everywhere else.

The road ahead will be difficult. Yet if Hawai‘i leverages its resources and strengths—particularly in committing necessary spending, adding personnel, and making urgent use of idle hotel space—we may still have a chance to escape what Covid has wrought elsewhere. With good fortune and thoughtful action, Hawai‘i could even emerge as a model for effective, reasoned, responsible crisis response, a success story for multicultural democracy.
At the height of the epidemic in Europe, Italians captured the internet by sending dire messages to their past selves. They railed against their complacency and implored themselves to heed public health advice. They warned themselves (as a dramatic way of warning us) that the virus was serious, that the virus was coming, and that the virus would tear life asunder.

Two weeks, two months, or even two years from now, we too will have the opportunity to look back and assess our present actions. Will we look back with weary regret, scolding our past selves for inaction and delay? Or will we look back with pride, knowing that we pulled together and defended Hawai‘i when it mattered most?

That is our choice.

This is our chance.
Citations


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