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HUMBOLDT COUNTY  
COVID-19 CONTAINMENT ELEMENTS

MAY 12, 2020

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## INTRODUCTION

The information outlined below demonstrates the readiness of Humboldt County to advance through Stage 2 while protecting essential workers and the community.

Humboldt County has created and shared with the community a local Roadmap to Recovery plan and a website providing current, accurate information to all residents and stakeholders, including a toolkit with guidelines and a simplified plan creation and approval process for business reopening.

The Humboldt County Containment Plan is in development to document further details of planning and preparation in the areas described below.

## EPIDEMIOLOGIC STABILITY OF COVID-19

As of May 11, 2020, Humboldt County has had 61 total cases of COVID-19 and has confirmed 8 cases of COVID-19 in the last 14 days. The last positive case was on May 10, 2020. The county has an estimated population of 135,558. Humboldt County has had less than one COVID-19 case per 10,000 in the past 14 days and has been fortunate to have had no known deaths due to COVID-19.

## PROTECTION OF STAGE 1 ESSENTIAL WORKERS

Throughout Stage 1 of this pandemic, Humboldt County Public Health and the Emergency Operations Center (EOC) Unified Command have emphasized communication as a primary goal of the operation. There has been frequent and consistent communication with the public through direct contact with the media and the public across all platforms from live press conferences and town hall meetings to distributed audio, video, radio and social media.

Our 17-person Joint Information Center (JIC) is staffed with public information officers, nurses and health educators and has been operating six days per week to accommodate the more than 5,000 calls from the public we have received since the incident began. The JIC has become a vital link for our partners as well, making 707-441-5000 the go-to source of reliable information for local cities and health facilities to refer to their residents and clients.

Additionally, Humboldt County has incorporated the following to support Stage 1 essential workers and their workplaces. These guidelines will apply to workers, businesses and organizations in future Stages also:

- Since COVID-19 arrived on the world stage, Humboldt County Public Health has provided outreach to the community and to local health care partners and coalitions. As COVID-19 became a state and local concern, and with activation of the EOC, biweekly calls were initiated with city and tribal government departments. Health care providers have received numerous and ongoing Health Alerts along with frequent phone, email contact and virtual meetings.
- Humboldt County participates in the Redwood Coast Healthcare Coalition with whom regular meetings are hosted and the members are aware of the supports that can be provided to them, including dissemination of guidance and supporting them in accessing Personal Protective Equipment (PPE) and other supplies
- First Responders, healthcare workers, law enforcement, social service providers and other essential workers as well as their employers have received information about COVID-19, prevention measures, workplace safety and the need for PPE appropriate to their positions.
- Public Health and the EOC have also responded to requests from essential service agencies and advised on and assisted in development of their policies and procedures regarding COVID-19 safety.
- The Humboldt County Medical Health Operational Area Coordinator (MHOAC) has worked extensively with critical infrastructure agencies/facilities to ensure that they have access to credible, up-to-date guidance and accessing PPE through commercial channels as well as through the MHOAC. PPE has been distributed widely and a summary is provided at the end of this document. Monitoring of PPE caches for at-risk responders and healthcare/congregate facilities across various fields is a key function of the EOC.
- An order requiring facial coverings was issued on April 28, 2020 by the Humboldt County Health Officer. This is an important added safety measure for our essential workforce and the community as a whole. This order has prepared the County to reduce shelter in place restrictions by normalizing the use of protective facial coverings.
- A county website, [www.humboldt.gov.org](http://www.humboldt.gov.org), has been organized to provide clear, accurate, and real-time guidance and information to the public including a link to the [governor's website](#), the State Roadmap webpages, business guidance, all Orders and local releases, and is now launching an on-line COVID-19 business operations plan submission form to support reopening plans that will be reviewed by a team at the EOC. When approved, businesses will be sent a branded version of the state checklist certificate to

signal compliance.

- Humboldt County has engaged broadly with community stakeholders and residents to prepare for the reopening process. Humboldt County administered a Community Survey on Business Reopening to gather community, local governmental and stakeholder input about what the reopening should look like in this county including businesses, public spaces and activities. Over 4,800 responses were received, providing the EOC and community leaders with information to help guide this process.
- Humboldt County maintains an awareness of the essential supplies that exist in the community and refers organizations outside of the medical fields to those resources when their typical retail channels fall short.
- As a condition of operating in Humboldt County, all businesses that wish to reopen will be required to submit detailed safety plans which align with the sector-specific guidance developed by the California Department of Public Health (CDPH) and the California Division of Occupational Safety and Health (CalOSHA). These documents are available at [covid19.ca.gov/roadmap](https://covid19.ca.gov/roadmap) and will assist employers in helping to ensure that employees and patrons are able to experience a safer environment.
- Sectors with CDPH/CalOSHA guidance currently available:

Agriculture and livestock	Energy and utilities	Mining and logging
Auto dealerships	Food packing	Office workspaces
Childcare	Hotels and lodging	Ports
Communications infrastructure	Life sciences	Public transit and intercity rail
Construction	Logistics and warehouse facilities	Real estate transaction
Delivery services	Manufacturing	Retail

## TESTING CAPACITY

Testing in Humboldt County occurs in multiple venues including the Humboldt County Public Health Laboratory (HCPHL), St. Joseph Health Care System-Eureka, United Indian Health Services Clinic (UIHS) and K'ima:w Medical Center. Other private clinics offer Point of Care (POC) testing and/or send outs to commercial labs and the HCPHL depending upon priority for testing. Other area hospitals are also developing POC testing capability on site.

Testing also occurs through our Optum site, which became operational on April 27, 2020. Our regional Federally Qualified Health Center (FQHC), Open Door Community Health Centers, and some private practices offer drive-through or drive-up specimen collection with provider orders. Some of these collected specimens go to commercial labs and some to the HCPHL. Humboldt County clearly has testing availability for greater than 75 percent of residents within 60 minutes of drive time in our rural area.

The average testing volume from May 2 to May 8 was 171 tests per day. Humboldt County Public Health Lab numbers and the Optum site include occasional non-Humboldt County residents, but Humboldt County residents make up the vast majority. Humboldt County's Optum testing site is still new, and it is expected that testing volume from this site will increase as community members learn about the test site and COVID-19 activity increases locally.

### COVID-19 (SARS-CoV-2) RT-PCR Laboratory Testing in Humboldt County

Average Volume	5/2	5/3	5/4	5/5	5/6	5/7	5/8	DAILY AVG
OptumServe Site Testing (Monday–Friday)	N/A	N/A	121	116	120	109	119	83
Humboldt County Public Health Laboratory (Monday–Saturday)	139	N/A	87	46	52	63	38	61
Commercial lab (non-Optum), POC testing at hospital and out-patient sites (estimated daily average)	27	27	27	27	27	27	27	27
Overall								171

Testing Capacity	Per day
OptumServe State Testing, Monday–Friday	132
HCPHL (maximum response capacity), Monday–Saturday	80
Commercial polymerase chain reaction (PCR) + Hospital POC with adequate reagents for Abbott and Biofire + Tribal and Private clinic POC (Abbott)	100
Total	302

Current capacity is 2.2 per 1,000 population. Current volume is 1.3 per 1,000 population. The current capacity has not been utilized fully. This is likely due to low levels of circulating respiratory illness prompting testing and our Optum site just recently becoming accessible to the public via on-line scheduling. With commercial testing capacity not exceeded at this time and the Optum site ability to double or triple tests per day based upon need, Humboldt will easily be able to routinely meet or exceed the two per 1,000 population daily testing capacity that is goal for our containment strategy.

Note: The testing capacity of the Public Health Lab and hospitals depends on continued and improved availability of test kits.

**Healthcare Settings Submitting Specimens to Commercial Labs** (Some also have POC and/or submit to HCPHL)

Name	Address	Operation
Healthcare (non-hospital)		
Open Door Community Health Centers-10 Primary Care Sites in Humboldt	Multiple Locations. Collection occurring at: 2426 Buhne Street Eureka, CA 95501	Screen and obtain specimen
United Indian Health Services (UIHS)	5 Locations in Humboldt County	Screen and obtain specimen
K'ima:w Medical Center	1200 airport Road Hoopa, CA 95546	Screen and obtain specimen
Karuk Tribal Health Clinic	39051 Ca Hwy 96 Orleans, CA 95556	Screen and obtain specimen
Redwoods Rural Health Center	101 West Coast Road Redway, CA 95560	Screen and obtain specimen
Eureka Veteran's Clinic	930 West Harris Street Eureka, CA 95503	Screen and obtain specimen
Fortuna Family Health	874 Main Street Fortuna, CA 95540-1926	Screen and obtain specimen
Full Circle Center for Integrative Medicine	4641 Valley East Blvd Ste 2 Arcata, CA 95521	Screen and obtain specimen
Mad River Health Care Clinic (Multiple clinics on one campus)	3798 Janes Road Arcata, CA 95521	Screen and obtain specimen
Redwood Renal Associates	2505 Lucas Street Eureka, CA 95501	Screen and obtain specimen
Priority Care Center	2316 Harrison Avenue Eureka, CA 95501	Screen and obtain specimen
Redwood Pediatrics	3305 Renner Drive Fortuna, CA 95540	Screen and obtain specimen
Scotia Bluffs Community Health Center	500 B Street Scotia, CA 95565	Screen and obtain specimen
Six Rivers Medical Clinic	850 Hwy 96 Willow Creek, CA 95573	Screen and obtain specimen
Southern Humboldt Community Clinic	509 Elm Street Garberville, CA 95542-3204	Screen and obtain specimen

Southern Trinity Health Services	321 Van Duzen Road Mad River, CA 95552	Screen and obtain specimen
St Joseph Hospital Medical Group- Family Medicine (Multiple clinics on one campus)	2280 Harrison Avenue Eureka, CA 95501	Screen and obtain specimen
Hospitals		
St Joseph Hospital-Eureka	2700 Dolbeer Street Eureka, CA 95501	Screen and obtain specimen
Redwood Memorial Hospital, Fortuna	3300 Renner Drive Fortuna, CA 95540	Screen and obtain specimen
Mad River Community Hospital	3800 Janes Road Arcata, CA 95521	Screen and obtain specimen
Jerold Phelps Community Hospital	733 Cedar Street Garberville, CA 95542	Screen and obtain specimen



## CONTAINMENT CAPACITY

In order to respond to COVID-19, Humboldt County has increased its contact investigation team from two nurses and one investigator at baseline to our current model with three contact tracers, six investigators, two taskforce leaders and one investigation unit supervisor. We are training additional staff from within and outside the agency to be able to expand to a structure of 59 individuals, including 44 contact tracers, 11 investigators, 3 taskforce leaders and a unit supervisor.

We have utilized investigators from the Sheriff's Office, environmental health, social services, and public health to expand our teams. We are training remaining nurses within our agency on communicable disease investigation on a rotating basis, and plan to leverage the expertise of retired local healthcare workers by training them as investigators or task force leaders.

To date, we have more than 18 per 100,000 trained personnel to respond, exceeding the CDPH requirement of 15 per 100,000 population.

In addition to the ongoing training detailed above, Humboldt County plans to utilize state resources for contact tracing training and staff if local contact tracing needs exceed capacity.

Type	Number & Notes
Investigation Unit Supervisor	One supervisor oversees the investigation unit.
Taskforce Leaders	Two public health nurses currently act as taskforce leaders, with a third able to oversee a team as the program expands.  Taskforce leaders provide oversight to three to four investigators.
Investigators	Six investigators are currently available to be assigned cases, with staffing seven days a week.  An additional five investigators are trained to allow the investigation unit to expand to eleven investigators, each overseeing a team of contact tracers.
Contact Tracers	Two contact tracers are currently working in the investigation unit, taking on all of the contact tracing activities for six investigators.  An additional 20 contact tracers are trained and available to be pulled into the investigation unit to increase capacity.  Over the next four weeks, an additional 30 investigators will be trained to provide enough capacity to handle for 25 new cases per day.
Unit Structure	The Investigation unit is divided into taskforces, each of which is led by a public health nurse, who offers support and oversight to three to four investigators.  Each taskforce is divided into three to four investigation teams, each of which is led by

	<p>an investigator, who provides oversight of each investigation being handled by the team.</p> <p>Each team includes four contact tracers who make phone calls, manage data, and report to the investigator for their team.</p>
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**Isolation and quarantine wraparound services**

- The Humboldt County EOC’s Health and Welfare Branch provides food, needed household supplies and prescription pickup for families isolated or quarantined and needing assistance. This includes both homeless individuals and those with domiciles.
- Instructions for symptom monitoring are provided, both verbally and in writing, to all infected or exposed individuals by our contact investigation team members. A system is in place to ensure that symptoms are checked regularly and that new onset or worsening of symptoms is reported to a nurse.
- Individuals infected with or exposed to COVID-19 are instructed on resources to support them including links to state benefits such as unemployment and Family and Medical Leave Act (FMLA) assistance specific to COVID-19 as appropriate.

## TEMPORARY HOUSING

The latest information on the number of individuals living unsheltered in Humboldt County is from the 2019 Housing and Urban Development (HUD) Point in Time count. As of January 2019, 1,702 individuals were counted as living unsheltered in Humboldt County. Fifteen percent of 1,702 is approximately 255 individuals. Currently, the County and partner agencies have the capacity to temporarily shelter a total of 280 individuals.

In March 2020, the Humboldt County Department of Health and Human Services (DHHS) entered into a lease agreement with the a Eureka hotel to provide short-term, temporary housing for people experiencing homelessness who need to be isolated or quarantined due to COVID-19, or who are at high-risk for experiencing severe COVID-19 illness.

The hotel has a total of 44 rooms available. As of May 9, 2020, 45 individuals had been isolated/quarantined for a total of 148 nights and 24 individuals in the high-risk category have been sheltered for a total of 349 nights.

The County's Emergency Operations Center's (EOC) Homeless Unit has worked with the county's largest Federally Qualified Health Centers, Open Door Community Health Centers and Providence St. Joseph's Hospital, to create a screening tool for COVID-19 utilized by the local free meal dining facility and various other homeless service provider organizations. These partners have also created a phone line for homeless individuals experiencing COVID-19 symptoms, staffed by a triage nurse who is able to screen individuals to determine if COVID-19 testing is needed. If testing is needed, 24/7 transportation is dispatched to pick up the client, take them to testing and then to lodging for isolation while they await test results. Further case management and linkage to care is provided on-site during the motel stay by DHHS' Housing, Outreach and Mobile Engagement (HOME) program.

High-risk individuals are identified and referred by provider organizations such as Arcata House Partnership (AHP), Southern Humboldt Housing Opportunities (SHO), the Eureka Rescue Mission, Affordable Homeless Housing Opportunities (AHHA), St. Vincent De Paul, Eureka Police Department's Community Safety Engagement Team (CSET). They are also identified through existing clients in DHHS' HOME program.

In addition to serving unsheltered individuals, DHHS—Public Health has also provided temporary accommodations to individuals who are unable to isolate safely from the other residents in their home (large family size in the home with elders, small children, shared bathroom, lack of isolation area) and will continue to do so on an as-needed basis.

DHHS has rented 16 portable toilets and 21 handwashing stations and placed them throughout the county to increase hygiene opportunities for people experiencing homelessness. Locations were identified in partnership with provider organizations serving the homeless. The EOC is currently distributing 1,300 reusable facial coverings to people experiencing homelessness and providing information about where used facial coverings can be collected, washed and redistributed.

Partner organizations serving people experiencing homelessness have also secured rooms at an additional four hotel and motel sites throughout the County.

In total, the County and partner agencies have the capacity to temporarily house people experiencing homelessness to 280 individuals, exceeding the 15 percent required.

## HOSPITAL CAPACITY

### Hospital Surge

There are four hospitals in Humboldt County. The county seat and most densely populated area is Eureka, home to St. Joseph Hospital–Eureka. Its sister hospital, Redwood Memorial Hospital in Fortuna, is a half hour drive to the south. These two hospitals are both part of the St. Joseph Health System and share a Chief Executive, Dr. Roberta Luskin-Hawk. Mad River Community Hospital is situated to the north in Arcata while Jerold Phelps Community Hospital is located in Garberville, at the southern end of Humboldt County.

All these facilities maintain emergency operation, surge, and pandemic plans and are required to train on these at least twice annually per Centers for Medicaid and Medicare (CMS) guidelines. Each facility has a staffing matrix to ensure adequate staffing and available on-call resources. Humboldt County hospitals work together and are involved in the local Redwood Coast Healthcare Coalition. All hospitals have participated in multiple, regularly occurring meetings with Public Health and the EOC surge branch since early in the pandemic.

The hospitals have all prepared a surge capacity plan for COVID-19. Surge beds were acquired by the planned reduction of services, elimination of elective surgeries and substantial conversion of space as well as the potential for outdoor tent screening. Jerold Phelps is more remote and does not have intensive care unit (ICU) capacity so will serve lower acuity patients. Emergency Medical Services (EMS) policies have been reviewed to ensure ambulance routing to the appropriate facility. The other three hospitals have expanded ICU care capacity and can accommodate greater than a 35% surge in overall bed capacity over the baseline expected utilization.

Facility:	Licensed Beds	Surge Beds	ICU Beds	Total Vents*
St. Joseph Hospital–Eureka	153	19	12 ICU+23 surge	12 ICU, 12 OR
Redwood Memorial Hospital	25	16	4 ICU	3 ICU, 3 OR, 2 transport
Mad River Community Hospital	78	55	6 ICU + 12 surge	5 ICU, 3 OR
Jerold Phelps Hospital	9	8	0	1 Transport

Bed polling is monitored daily through CDPH.

\*Humboldt County has an additional 5 full-feature ICU vents for distribution.

Examples of hospital surge plan strategies include canceling elective procedures, re-purposing of medical staff where appropriate, and utilizing on-call and per diem staff. Each facility has specific plans for reassigning

beds and opening additional spaces for patient care such as other treatment areas not traditionally used as bed space. Operating theaters can also be used to house ICU beds.

Beyond in-hospital surge beds, our County has worked with the two largest hospitals to develop substantial bed capacity beyond hospital walls. Mad River Community Hospital has an alternate care site (ACS) for overflow of medical surgical patients during a COVID-19 surge and would make requests to the MHOAC program, through logistics in the County EOC to assist with supplies and set up an additional 30 to 50 beds on or adjacent to their campus if needed. St. Joseph Hospital–Eureka will oversee operations at an ACS with EOC support on our county fairgrounds and can serve 96 additional low acuity COVID-19 patients. Our ACS capacity effectively doubles our in-hospital surge capacity.

### **Protecting the Hospital Workforce**

Area hospitals have strict policies in place to protect patients, medical staff and non-clinical staff. Daily screening procedures are in place, PPE is provided, and training and education occurs regularly. All staff have been notified of COVID testing facilities and allowed work time for tests. The hospitals have existing mechanisms for tracking occupational exposures within their workforce. Any COVID-related exposures would be monitored through each hospital's infection control personnel and/or employee services.

All hospitals in Humboldt County have commercial supply chains for PPE. In the event of a surge and a shortage of PPE, MHOAC would work with the hospitals to provide PPE but all are well-equipped at present. Hospitals have PPE optimization Centers for Disease Control and Prevention (CDC) guidance and have received information about Battelle option for sanitizing masks. Employees are trained regarding PPE use.

### **Humboldt County Alternate Care Sites**

As noted above, Humboldt County has two alternative care sites.

Mad River Community Hospital will operate an additional 30 to 50 beds initially for non-COVID-19 Med/Surg patients, with the flexibility to transition to COVID-19 low acuity patients if needed.

Additionally, Humboldt County has a large, 96-bed ACS established and furnished. The EOC Operations Section, Medical Surge Branch anticipates completion of set up within the next seven to 14 days. Currently the ACS is planned for use as a low-acuity COVID-19 setting. If a trigger indicates we need to utilize this capacity, we would target the following:

In the first 48 hours:

- Secure and physically setup the site
- Implement the staffing and supply plans
- Communicate with hospitals that are nearing capacity

Within 5-7 days:

- Staffing operational and supply resources on hand
- Coordinate with hospitals to receive transfer patients

The County has looked to local staffing models and PPE supply chains to safely operate the facility. However, it remains

a real possibility, given impacts of illness to workforce and need to lower staffing ratios in hospitals as ICU patient census increases, that we may fall short in adequately staffing an ACS and having adequate PPE in place to do so. The County would look to regional and state support in these scenarios should the ACS become operational.

## VULNERABLE POPULATIONS

Humboldt County has four Skilled Nursing Facilities (SNFs) and 41 Assisted Living Facilities (ALFs). There is one county jail (400 capacity) and one juvenile hall (50 to 60 capacity). The community has three homeless shelters. The Humboldt County Public Health Laboratory (HCPHL) prioritizes testing specimens for individuals living or working in these settings as an important containment measure. These settings utilize guidance documents created by the CDC and CDPH as well as industry-specific guidance. The EOC's Joint Information Center, staffed by health educators and nurse advisors, also serves as a COVID-19 information resource staff serving these populations.

The EOC Operations Section has a branch working with SNFs and ALFs. The County has the capacity to support testing congregate facilities and has been working extensively with SNFs to screen employees, and to develop plans to isolate and quarantine residents on-site in the absence of a COVID-19-specific facility. The County performs surveillance on their direct patient-care workforce and tests all new admits to SNFs and ALFs.

ALFs have been targeted for assistance in identifying capacity to isolate and quarantine on-site or to identify off-site options, such as motel lodging with appropriate supportive services.

The local jail has a nursing director on-site who has developed a robust isolation and quarantine plan within the jail, including a 14-day quarantine for new arrivals. Surveillance for illness in staff and inmates is in place; the HCPHL is able to offer testing for any symptomatic inmates or staff. The Optum test site has also been utilized to screen corrections staff. Public Health and the jail have been able to work well on a consultative basis to meet needs.

Humboldt County DHHS has been actively engaged with entities and coalitions serving the homeless community. Front-line workers are encouraged to access the Optum screening site for surveillance and ill members would be prioritized for specimen testing within the HCPHL.

In the event of an outbreak in a facility that were to exceed the facilities' PPE capacity, the PPE contingency plan includes Healthcare Coalition and Public Health/MHOAC support. All entities are encouraged to reach out to the MHOAC for assistance in identifying sources for PPE if needed. Specifically, all four SNFs currently have a 14-day supply of PPE and have non-state supply chains available. ALFs vary in their PPE supply caches and the Operations Section is working with them one-on-one to ascertain need and on-going supply chain access

## SECTORS AND TIMELINES AND PLAN FOR MOVING THROUGH STAGE 2

STAGE 2	SECTORS	TIMELINE
	<p>Healthcare sector is slowly adding back deferred preventive and elective services and procedures. This will continue throughout Stage 2 based on capacity of individual facilities.</p> <p>Low-risk workplaces that have been pre-planning their reopening: Retail to begin with the option of curbside pickup, including but not limited to: Bookstores, jewelry stores, toy stores, clothing stores, shoe stores, home and furnishing stores, sporting goods stores, antique stores, music stores, florists. Supply chains supporting the above businesses, in manufacturing and logistical sectors</p> <p>Retail including customer foot traffic Personal services, limited to: car washes, pet grooming, tanning facilities, and landscape gardening.</p> <p>Office-based businesses (telework remains strongly encouraged) Outdoor dining Destination retail, including shopping malls and swap meets without on-site dining Dine-in restaurants (other facility amenities, like bars or gaming areas, are not permitted) Outdoor museums and open gallery spaces</p>	<p><i>May 4, 2020</i></p> <p><i>May 9, 2020</i></p> <p><i>With CDPH posting of attestation <u>and</u> approval from EOC</i></p> <p><i>To Follow as determined by Health Officer</i></p>
	<p>Childcare will expand from serving children of essential service workers only to broader workforce. Childcare may be broadened to include summer day camps that are able to operate in accordance with childcare safety protocols outlined in Humboldt County's Health Order.</p>	<p><i>Anticipated May to June</i></p>



## TRIGGERS FOR ADJUSTING MODIFICATIONS

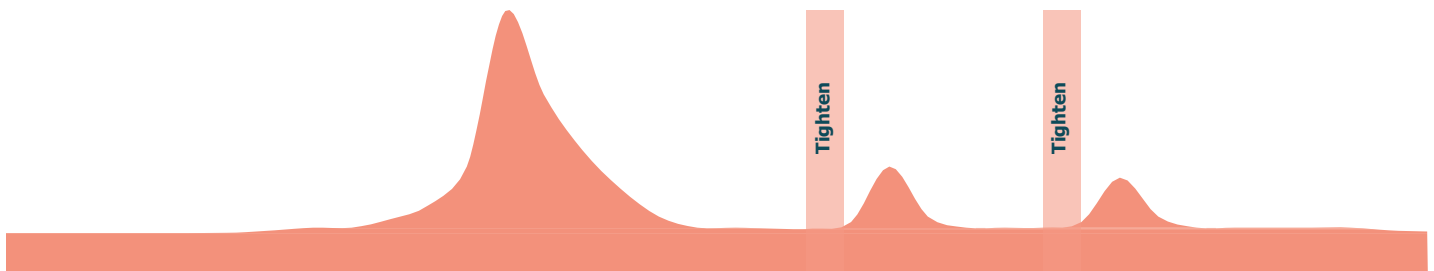
Resolve to Save Lives (RSL), an Initiative of Vital Strategies, describes the [Adaptive Response to the COVID-19 pandemic](#), represented in Figure 1. Humboldt County plans to adopt this framework to help guide our local response efforts. The RSL report contains detailed criteria by which to loosen and tighten restrictions. Namely, it emphasizes three sub-categories of criteria, all of which have measurable benchmarks:

1. Epidemiology
2. Healthcare
3. Public health

### FIGURE 1. The Adaptive Response to COVID-19. (REPRODUCED FROM RESOLVE TO SAVE LIVES)

The RSL report indicates that COVID-19 physical distancing measures can be loosened when all criteria are met referenced in Figure 2 (below), *When and How to Open After COVID-19*, largely in line with CDPH guidance on the issue. Once these criteria are met, loosening restrictions can happen over time to reopen. Strict mitigation measures are needed when one or more criteria in at least two of three categories are met. If the criteria are met, tightening of restrictions should occur. (See Figure 3 below *When and How to Close due to COVID-19 Spread*.) The report underscores that retightening restrictions should remain an option for the foreseeable future.

### When and How to Close due to COVID-19 Spread



We have adapted this foundational framework to implementable criteria as seen below.

#### CATEGORY 1 - Epidemiology

- Significant\* increase in new cases over three consecutive calendar or workdays in the context of no substantial increase in testing
- Doubling time of cases less than five days (from most recent nadir)
- More than three unlinked chains of transmission in a 14-day period
- High likelihood of exposure at mass gathering or congregation of people or delayed detection of a case (greater than five days) from a -mass gathering or long- term care facility
- Concerning, persistent increase in influenza-like illnesses in syndromic surveillance\*\*
- Increasing number of new health care worker infections for five consecutive days

## **CATEGORY 2 - Health Care**

- Inability to scale up to double the number of ICU patients from current census (including staffing)
- Can no longer screen significant\* numbers of symptomatic patients safely (including staffing)
- Inadequate availability of PPE for healthcare workers
- Insufficient face masks to provide to all patients seeking care
- Unacceptable ratio\* of admissions to discharges for COVID-19
- Health care facilities can no longer be structured to reduce possibility of exposure at triage and all other locations

## **CATEGORY 3 - Public Health Response**

- Cannot elicit contacts for 20 percent or more of cases
- 10 percent or more of symptomatic contacts fail to get tested or get tested in more than 24 hours of symptom onset
- Insufficient hand sanitizer to place at entry of buildings including workplaces
- No designated facilities for non-hospitalized COVID-19 infected people who can't be safely cared for at home (e.g., because of space constraints, medically vulnerable household members, or otherwise)

These metrics and trigger points are subject to change should the COVID-19 situation dictate.

It is important to note that the availability and fidelity of local data would be fundamental to objective assessment against the criteria. Humboldt County monitors epidemiologic data and reports out daily, at which time we also assess our continued ability to fulfill public health response criteria. We have also developed *Humboldt County Medical Resources* (see Figure 4 below) as a dashboard to collate relevant hospital system information, loosely guiding thresholds and triggers for movement along our continuum of county-wide response summarized in our *Medical Response Matrix for COVID-19* (see Figure 5 below). This continuum also seeks to guide systems level situational awareness, county-wide healthcare operations, and the opening of alternate care sites. These markers include COVID-19 hospitalization census, bed status, ICU bed status, negative pressure room occupancy, and vent occupancy rates. In this same spirit, the County regularly communicates with hospital partners to assess Health Care criteria, involving the Regional Disaster Medical Health Specialists (RDMHS) and regional County partners as needed to inform them of changes in status, particularly of any emerging concerns identified. As we further expand our plan, we will look to develop an approach incorporating regional metrics.

\*Epidemiologist to be relied upon to identify findings of possible significance and bring them to full local Health Expert Panel for review

\*\*if syndromic surveillance data are available

**FIGURE 2. When and How to Reopen After COVID-19. (Reproduced from Resolve to Save Lives)**

# When and How to Reopen After COVID-19

**COVID-19 PHYSICAL DISTANCING MEASURES CAN BE LOOSENED WHEN ALL OF THE FOLLOWING CRITERIA ARE MET:**

Epidemiology	Health Care	Public Health
<ul style="list-style-type: none"> <li>✓ Decreasing cases in the context of increasing testing (or stable testing with decreasing positivity) for at least 14 days</li> <li>✓ Decreasing numbers and proportions of cases not linked to a source case (goal less than 3 unlinked cases per 2-week period)</li> <li>✓ Steady decrease in ILI in syndromic surveillance for at least 14 days</li> <li>✓ Decline in deaths for at least 14 days</li> <li>✓ Decreasing health care worker infections such that infections are now rare</li> </ul>	<ul style="list-style-type: none"> <li>✓ Ability – including staffing – to double number of patients treated in intensive care units from current census</li> <li>✓ Ability – including staffing – to screen large numbers of symptomatic patients safely (e.g., outdoor tents, drive through)</li> <li>✓ Sufficient PPE for all health care workers even if cases double</li> <li>✓ Sufficient face masks to provide to all patients seeking care even if cases double</li> <li>✓ More discharges than admissions for COVID-19</li> <li>✓ Ensure at least baseline capacity in general health services, including through expansion of telemedicine for Covid-19 and usual care</li> <li>✓ Health care facilities enforce policies and redesign to minimize possibility of exposure at triage and all other locations</li> </ul>	<ul style="list-style-type: none"> <li>✓ All cases interviewed for contact elicitation</li> <li>✓ Contacts elicited for at least 90% of cases</li> <li>✓ 100% of symptomatic contacts and others with symptoms undergo testing within 12 hours of identification of symptoms</li> <li>✓ Enough hand sanitizer to place at entry and strategically placed in buildings including workplaces</li> <li>✓ Designated facilities for non-hospitalized covid-infected people who can't be safely cared for at home (e.g., because of space constraints, homelessness, medically vulnerable household members, or otherwise)</li> <li>✓ Demonstrated ability to convey physical distancing recommendations that change behavior in most residents</li> </ul>



**ONCE THE LOOSEN CRITERIA ARE MET, THE FOLLOWING ACTIONS CAN HAPPEN OVER TIME TO REOPEN:**

Action	Initial re-opening only if all criteria above met	4-8 weeks later if no significant increase in cases and criteria remain met	8-16 weeks later if no significant increase in cases and criteria remain met
Wash hands often	Continue	Continue	Continue
Cover coughs	Continue	Continue	Continue
Don't go out if ill	Continue	Continue	Continue
Face mask if ill persons go out	Continue	Continue	Continue
Surface and object cleaning	Continue	Continue	Continue
Enhanced ventilation	Continue	Continue	Continue
Isolation of cases	Continue	Continue	Continue
Quarantine of contacts of cases	Continue	Continue	Continue
Physical distancing to 6 feet when possible – avoid crowding	Continue	Pause physical distancing	Pause physical distancing
Stop visits to nursing homes, hospitals, congregate facilities	Continue	Continue	Continue
Ban all gatherings including religious (above 10, 50 people)	Continue – 10	50	Allow all gatherings
Restaurant closures	Reopen with physical distancing*	Reopen	Reopen
Bar closures	Continue	Reopen with physical distancing*	Reopen
General business closures	Partial reopening*	Additional phased reopening	Reopen
Special situation business closures**	Partial reopening*	Reopen	Reopen
Post-secondary ed closures	Continue	Consider reopening	Reopen
K-12 in-person closures	Reopen*	Reopen*	Reopen
Day care closures	Reopen*	Reopen*	Reopen
Quarantine of travelers from high-prevalence areas	Continue, informed by data on spread	Continue, informed by data on spread	Continue, informed by data on spread

\*People over age 60, including employees and those who are medically vulnerable continue to shelter in place, including employees. Online education/work encouraged wherever possible.

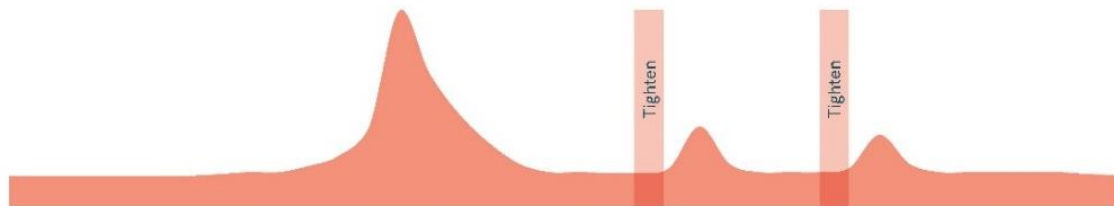
\*\*Special business situations include strategically important entities (e.g., infrastructure); entities which can reopen while ensuring safe commute, physical distancing, exclusion of anyone ill, and mandatory handwashing/sanitizing at entry and periodically during day.

**Note:** Decisions on both when and what to open must be made based on evolving knowledge (e.g., infectivity of children), availability of treatment, community acceptance and adherence, and other evolving knowledge and experience. Other restrictions, such as limitations on crowding in public transport, also necessary with graduated reopening.



FIGURE 3. When and How to Close due to COVID-19 Spread. (Reproduced from Resolve to Save Lives)

## When and How to Close due to COVID-19 Spread



**STRICT MITIGATION MEASURES ARE NEEDED WHEN ONE OR MORE CRITERIA IN AT LEAST 2 OF 3 COLUMNS ARE MET:**

Epidemiology	Health Care	Public Health
<ul style="list-style-type: none"> <li>✓ Increasing new case counts of at least 10% for 3 consecutive days in the context of no substantial increase in testing</li> <li>✓ Doubling time of cases less than 5 days (from most recent nadir)</li> <li>✓ More than 3 unlinked chains of transmission in a 14-day period</li> <li>✓ High likelihood of exposure at mass gathering or congregation of people or delayed detection of a case (&gt;5 days) from a mass gathering or long-term care facility)</li> <li>✓ Steady increase in ILI in syndromic surveillance for at least 10 days above seasonal average</li> <li>✓ Increasing number of new health care worker infections for 5 consecutive days</li> </ul>	<ul style="list-style-type: none"> <li>✓ Inability to scale up to 2x the number of ICU patients from current census (including staffing)</li> <li>✓ Can no longer screen large numbers of symptomatic patients safely (e.g., outdoor tents, drive through) (including staffing)</li> <li>✓ Less than 4 weeks supply of PPE for double the current case load</li> <li>✓ Insufficient face masks to provide to all patients seeking care even if cases double</li> <li>✓ More admissions than discharges for COVID-19 over 3 consecutive days</li> <li>✓ Do not have baseline capacity in general health services, including through expansion of telemedicine for Covid-19 and usual care</li> <li>✓ Health care facilities can no longer be structured to reduce possibility of exposure at triage and all other locations</li> </ul>	<ul style="list-style-type: none"> <li>✓ Cannot elicit contacts for 20% or more of cases</li> <li>✓ 10% or more of symptomatic contacts fail to get tested or get tested in more than 24 hours of symptom onset.</li> <li>✓ Insufficient hand sanitizer to place at entry of buildings including workplaces</li> <li>✓ No designated facilities for non-hospitalized COVID-19 infected people who can't be safely cared for at home (e.g., because of space constraints, medically vulnerable household members, or otherwise)</li> <li>✓ No longer have the ability to convey physical distancing recommendations which change behavior in residents</li> </ul>



**ONCE THE CLOSURE CRITERIA ARE MET, THE FOLLOWING ACTIONS SHOULD BE TIGHTENED OVER TIME:**

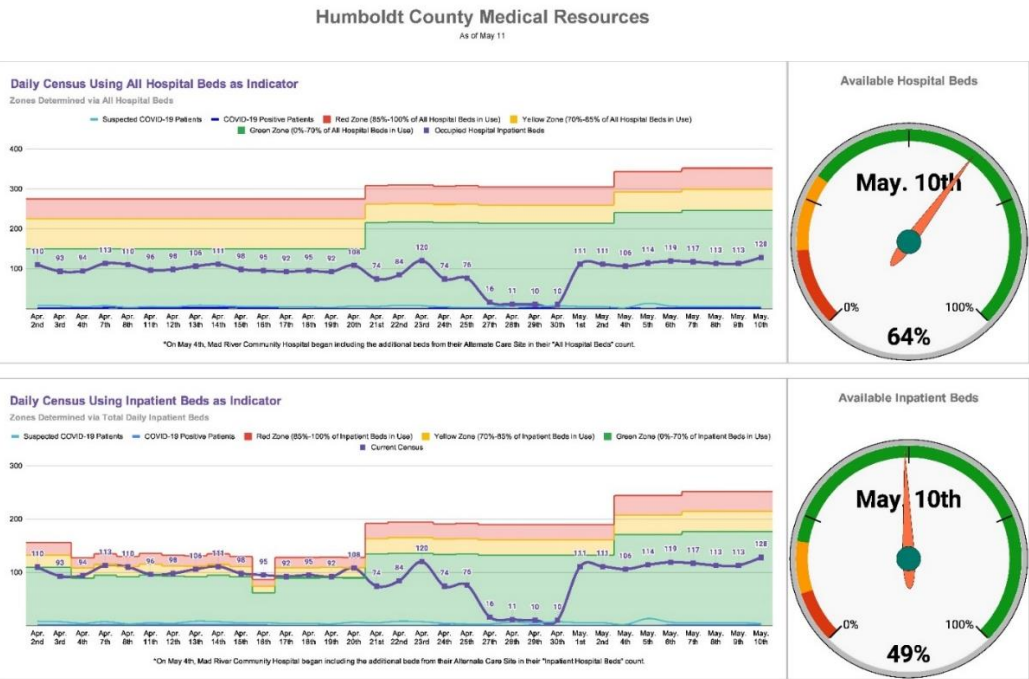
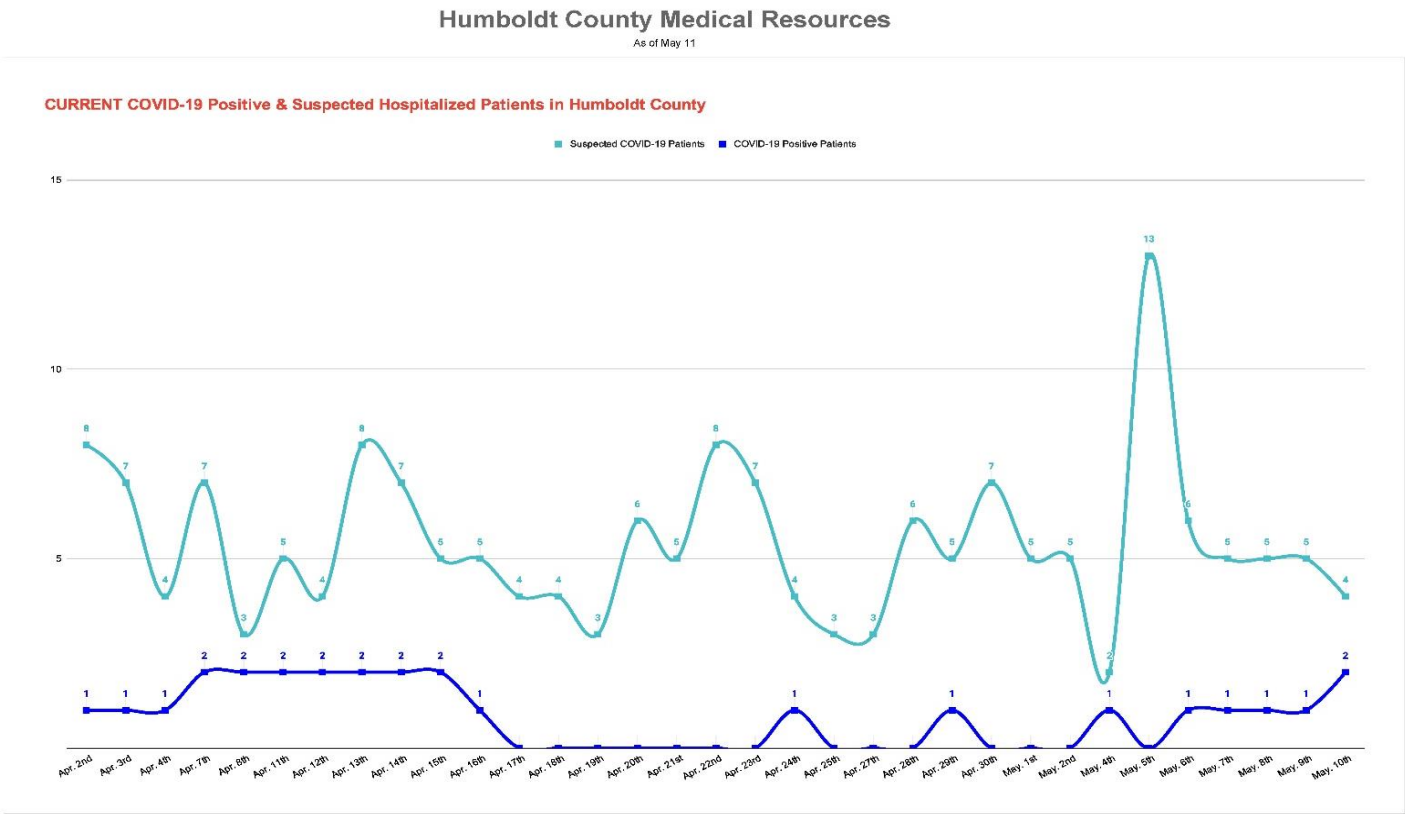
Action	Tighten immediately (if not already on)	Maximum tightening
Wash hands often	Already on	Continue
Cover coughs	Already on	Yes
Don't go out if ill	Already on	Yes
Face mask if ill go out	Already on	Yes
Face mask for all in community	No	Consider
Surface and object cleaning	Already on	Yes
Increase ventilation	Already on	Yes
Quarantine of contacts of cases	Already on	Yes
Physical distancing to 6 feet when possible – avoid crowding	Turn on	Yes
Stop visits to nursing homes, hospitals, congregate facilities	Already on	Yes
Ban all gatherings including religious (above 10, 50 people)	Yes for 50 or more*	Yes, all non-household
Restaurant closures	Open – only delivery/to go	Open – only delivery/to go
Bar closures	Open – only delivery/to go	Turn on
Special situation business closures**	Partial closure*	Yes, all
General business closures (non-essential)	Turn on	Yes
University closures	Yes (online encouraged)	Yes (online encouraged)
K-12 closures	Yes (online encouraged)	Yes (online encouraged)
Day care closures	Yes	Yes
Quarantine of travelers from high-prevalence areas	Yes, voluntary	Yes, mandatory

\*People over age 60 and those who are medically vulnerable, including employees, continue to shelter in place, including employees.

\*\*Special business situations include strategically important entities (e.g., infrastructure), entities which can reopen while ensuring safe commute, physical distancing, exclusion of anyone ill, and mandatory handwashing/sanitizing at entry and periodically during day.

**Note:** Decisions should be made based on evolving knowledge (e.g., infectivity of children), availability of treatment, community burden, acceptance and adherence, and other factors.

FIGURE 4. Humboldt County Medical Resources

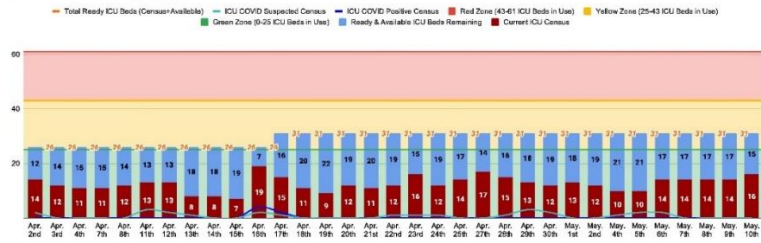


## Humboldt County Medical Resources

As of May 11

### Daily ICU Census & Ready ICU Beds

Zones Determined via Max Surge-Plan (51)

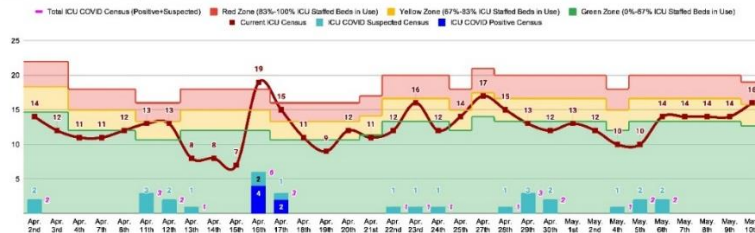


### Ready & Available ICU Beds + Planned Avail. "Surge-Plan ICU Beds"

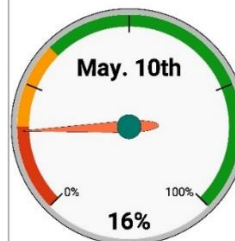


### Daily ICU Census

Zones Determined via Total Daily Staffed ICU Beds



### Available Staffed ICU Beds

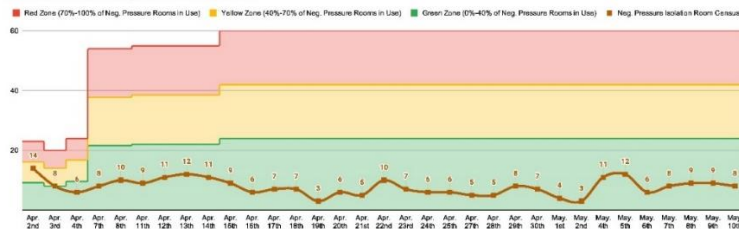


## Humboldt County Medical Resources

As of May 11

### Daily Negative Pressure Isolation Room Usage

Zones Determined via Total Negative Pressure Isolation Rooms

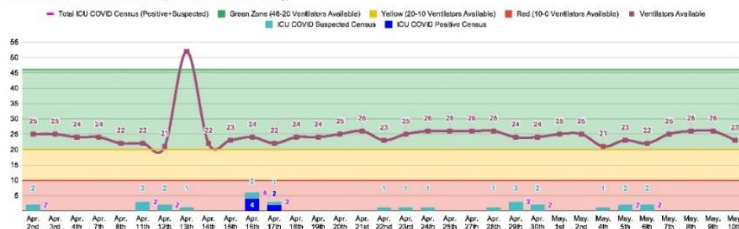


### Available Neg. Pressure Rooms



### Daily Available Ventilators

Zones Determined via Total Ventilators (20 Full / 21 Limited / 5 County)



### Available Ventilators



\*Please note variations due to reporting inconsistencies which have been remedied.



**FIGURE 5. Humboldt County Medical Response Matrix**

MEDICAL RESPONSE MATRIX FOR COVID-19				
Description	No outbreak	Mild impact	Severe impact	Critical impact
	<p><b>Fundamental Precautions and Preparedness. Minor Risk.</b> No definitive risk or only a minor risk to the public's health has been identified within a jurisdiction.</p> <p><b>Conditions:</b></p> <ul style="list-style-type: none"> <li>Small number of positive cases with no known cases of community transmission</li> </ul> <p><b>Indicators:</b></p> <ul style="list-style-type: none"> <li>Normal system levels</li> <li>Normal ambulance patient offload times</li> <li>Baseline sick calls</li> <li>Normal ED/EMS volume</li> <li>Normal EMS volume</li> <li>Isolation beds generally available</li> <li>Normal staffing</li> <li>Isolating sick and asymptomatic</li> <li>PSC stable and fully operational</li> </ul>	<p><b>Enhanced precautions for those at elevated risk and serious illness for COVID-19. Potential Widespread incident.</b> Situation likely to progress increasing the risk for the community and requires additional specialized intervention by certain types of organizations.</p> <p><b>Conditions:</b></p> <ul style="list-style-type: none"> <li>Evidence suggesting regional community transmission a.) Uptick in influenza like illness (ILI) monitoring; and b.) community transmission documented in multiple communities outside of the jurisdiction, in particular, in counties surrounding the County</li> <li>Verified Humboldt County community transmission</li> <li>Social distancing implemented</li> <li>School closures</li> </ul> <p>Continue action items implemented in Level Green, add the following:</p> <ul style="list-style-type: none"> <li>Prepare alternate care sites</li> </ul> <p><b>Indicators:</b></p> <ul style="list-style-type: none"> <li>Occasional system level depletion</li> <li>12-15 minute ambulance patient offload times</li> <li>Increased ED volume</li> <li>Increased EMS volume but within routine surge capacity</li> <li>Isolation beds in short supply</li> <li>ICU bed occupancy no greater than 2/3 max capacity</li> <li>Vent occupancy &lt;50%</li> <li>Increased sick and asymptomatic managed by callbacks and overtime</li> <li>PSC stable but concerned about staffing or other structural challenges</li> </ul>	<p><b>Enhanced precautions broadly. Widespread incident.</b></p> <p><b>Conditions:</b></p> <ul style="list-style-type: none"> <li>Definitive evidence of significant Humboldt County community transmission exists</li> <li>Social distancing implemented</li> <li>One or more criteria in 2 or more categories for high oncoming criteria are met: epidemiology, health care, public health response</li> </ul> <p>Continue action items implemented in Level Yellow as appropriate, add the following:</p> <ul style="list-style-type: none"> <li>Staff and activate alternate care sites</li> <li>Consider EMSA approval of ACS as alternate destination</li> <li>Institute more strict mitigation measures</li> </ul> <p><b>Indicators:</b></p> <ul style="list-style-type: none"> <li>Frequent system level depletion</li> <li>15-30 minute ambulance patient offload times</li> <li>Isolation beds unavailable</li> <li>Vent occupancy 50-80%</li> <li>ED volume exceeds routine surge capacity</li> <li>EMS volume exceeds routine surge capacity</li> <li>Increased sick and asymptomatic difficult to manage by callbacks and overtime</li> <li>PSC impacted by staffing or structural challenges</li> </ul>	<p><b>Extensive community mitigation. Critical incident.</b> Infection has not been contained by other less restrictive measures.</p> <p><b>Conditions:</b></p> <ul style="list-style-type: none"> <li>Rapid community transmission persists despite aggressive mitigation efforts</li> <li>Widespread disruption to normal life</li> </ul> <p>Continue action items implemented in Level Red, add the following:</p> <ul style="list-style-type: none"> <li>Consider activation of alternate care sites as alternate EMS transport destination</li> <li>Consider activating outpatient clinic converting to Urgent Care model</li> </ul> <p><b>Indicators:</b></p> <ul style="list-style-type: none"> <li>Persistent system level depletion</li> <li>&gt;30 minute ambulance patient offload times</li> <li>Isolation beds unavailable</li> <li>Vent occupancy &gt;80%</li> <li>ED volume exceeds routine surge capacity despite modified prioritization and response configuration</li> <li>EMS volume exceeds routine surge capacity despite modified prioritization and response configuration</li> <li>Widespread sick and asymptomatic unable to be managed by callbacks and overtime</li> <li>PSC significantly impacted by staffing or structural challenges</li> </ul>
INTERVENTIONS				
Entity	No outbreak	Mild impact	Severe impact	Critical impact
Clinics	<ul style="list-style-type: none"> <li>Prepare for staffing shortages/continuity plans</li> <li>Plan for modified patient flow</li> <li>Plan for social distancing</li> <li>Prepare for surge volume</li> </ul>	<ul style="list-style-type: none"> <li>Consider contracting for temporary staffing</li> <li>Prepare for increased patient volume</li> <li>Implement social distancing</li> <li>Adapt PPE use consistent with best available guidance</li> </ul>	<ul style="list-style-type: none"> <li>Prepare to receive consider urgent care model</li> <li>Organize current staff around providing acute care</li> <li>Formalize partner facility staff agreements</li> <li>Consider CA/Med request and/or disaster healthcare volunteers</li> </ul>	<ul style="list-style-type: none"> <li>"Urgent Care" model non-respiratory walk-ins</li> <li>Consider "Teler" or respiratory clinics</li> </ul>
Emergency Departments	<ul style="list-style-type: none"> <li>Prepare for staffing shortages/continuity plans</li> <li>Plan for modified patient flow</li> <li>Plan for social distancing</li> <li>Prepare for surge volume</li> </ul>	<ul style="list-style-type: none"> <li>Consider contracting for temporary staffing</li> <li>Plan for modification of admissions criteria</li> <li>Begin implementing surge plan</li> <li>Implement social distancing</li> <li>Adapt PPE use consistent with best available guidance</li> </ul>	<ul style="list-style-type: none"> <li>Modify admissions criteria implemented</li> <li>Surge plan implemented</li> <li>Develop and finalize crisis standard of care protocols for appropriate use criteria of limited critical care resources</li> </ul>	<ul style="list-style-type: none"> <li>Implement crisis standard of care protocols for appropriate use criteria of limited critical care resources</li> </ul>
Hospitals	<ul style="list-style-type: none"> <li>Prepare for staffing shortages/continuity plans</li> <li>Plan for modified patient flow</li> <li>Plan for social distancing</li> <li>Prepare for surge volume</li> </ul>	<ul style="list-style-type: none"> <li>Consider contracting for temporary staffing</li> <li>Prepare for modification of admissions criteria</li> <li>Begin implementing surge plan</li> <li>Implement social distancing, mandatory facial covering</li> <li>Adapt PPE use consistent with best available guidance</li> </ul>	<ul style="list-style-type: none"> <li>Modify admissions criteria implemented</li> <li>Surge plan implemented</li> </ul>	<ul style="list-style-type: none"> <li>Implement crisis standard of care protocols for appropriate use criteria of limited critical care resources</li> </ul>
EMS	<ul style="list-style-type: none"> <li>Assess personnel, PPE &amp; resource availability</li> <li>Assess scope of practice increase</li> <li>Prepare for surge volume</li> <li>Plan to modify patient flow</li> <li>Plan for modified staff staffing</li> <li>Plan to modify dispatch protocols</li> <li>Plan for social distancing</li> <li>Disseminate PPE guidelines</li> <li>Secure EMSA approval for EMT/medic testing</li> </ul>	<ul style="list-style-type: none"> <li>Authorize modified dispatch protocols</li> <li>Authorize changes to protocols to mitigate risk</li> <li>Implement enhanced PPE protocols, secure PPE supply</li> <li>Implement isolation decontamination</li> <li>Plan to increase staffing and ambulance increase</li> <li>Prepare to implement triage and intake protocol</li> <li>Implement EMT/paramedic COVID testing/training</li> <li>Review patient transport and transfer practices</li> <li>Assess options for paramedic or hospital RN transfer of very sick patients</li> <li>Plan for non-ambulance transport for low acuity patients to ACS</li> <li>Prepare for referral to alternate destination</li> </ul>	<ul style="list-style-type: none"> <li>Prepare for non-dispatch or low acuity admissions</li> <li>Assess and implement dispatch changes as needed</li> <li>Authorize dispatch and refer protocol disposition and destination</li> <li>Implement EMT/paramedic testing</li> <li>Increase ambulance staff and ambulance availability</li> <li>Implement ambulance decontamination guidelines per consensus plan</li> <li>Support use of hospital RNs on transfer of very sick patients</li> <li>Implement non-ambulance transport for low acuity patients to ACS</li> <li>Consider requesting EMSA approval of COVID focused COT training</li> <li>Duty Officer to directly support county EOC</li> </ul>	<ul style="list-style-type: none"> <li>Authorize centralized destination for acute respiratory patients per consensus plan</li> <li>Continue to authorize dispatch changes as needed</li> <li>Authorize single paramedic first response as needed</li> <li>Support non-ambulance transport for low acuity patients to ACS per consensus plan</li> <li>Implement MCI triage of patients</li> <li>EMS Duty Officer available to M-OWC and county EOC 24/7</li> </ul>

## CRITICAL SUPPLIES

### Personal Protective Equipment Quantities in Humboldt County

As of May 11, 2020, the Humboldt County EOC had distributed approximately 53,000 PPE items to hospitals, clinics, SNFs, care homes, and first responders. Items include N95 respirators, surgical masks, eye protection, gloves, and body protection equipment. These distributions were based on resource requests initiated by 69 agencies/facilities.

To determine burn rates of EOC-distributed supplies, we require weekly reporting of each agency's usage. According to the self-reporting of these 69 agencies/facilities, as of May 11, 2020, there are still approximately 44,000 PPE items on hand.

Based on their reporting, we resupply any PPE that needs to be replenished to maintain continuity of healthcare and first responder operations with COVID-19. In addition to the self-reporting directly to the EOC, we review state-reporting from hospitals and SNFs to determine the status of PPE. With these reporting sources and the EOC's inventory, we believe we have at least two weeks' worth of PPE on hand. With any shortage of supplies, we utilize any available supply chains and the MHOAC process.

### Lab Testing Quantities at Humboldt County Public Health Lab

		Swabs	VTM	VTM + Swab Kits
Total on Hand	Quantity on Hand:	2,070	1,380	280

## CONTAINMENT PLAN

The surveillance metrics and the framework described above will guide much of Humboldt County's decision-making as the County moved forward into Stage 2 of the reopening process, ensuring that Humboldt's COVID-19 response continues to be driven by data and public health science. Humboldt is still working with partners from many sectors to determine specific containment protocols ongoing with the COVID-19 response. As triggers are met or concerns identified, Humboldt County will immediately inform the state and request technical support as needed. The County regularly communicates with its regional County partners and will inform them of changes or concerns identified.

The Health Officer and Deputy Health Officer participate in the Rural Association of Northern California Health Officers (RANCHO). Health Officers from multiple counties including Mendocino, Lake, Shasta, Siskiyou, Del Norte, Tehama and Humboldt participate regularly. This entity was established to ensure regional communication and planning capacity across the region during the COVID-19 pandemic. Currently, Humboldt County is working with CDPH and Del Norte County on developing a regional approach to testing that could help expand capacity in Del Norte and possibly Trinity County. It is important that all counties in the region have robust testing capacity to respond to the COVID pandemic.