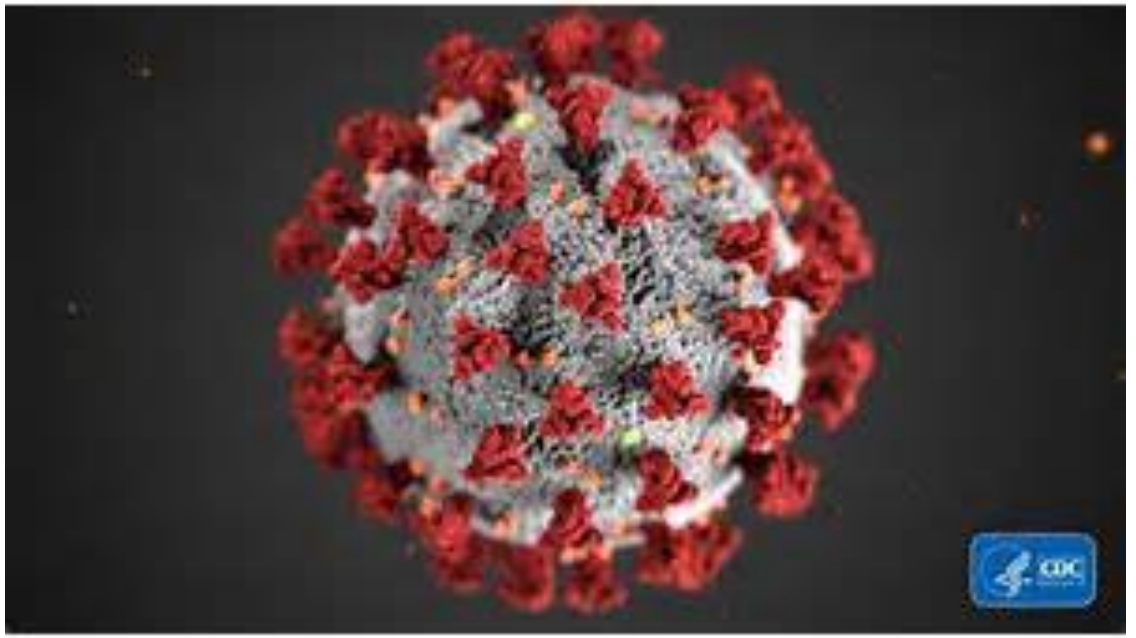
COVID-19 Update



Monterey County Health Department, Public Health Bureau

Edward L. Moreno, MD, MPH, Health Officer and Director of Public Health

April 14, 2020

Current Situational Status

As of April 12:

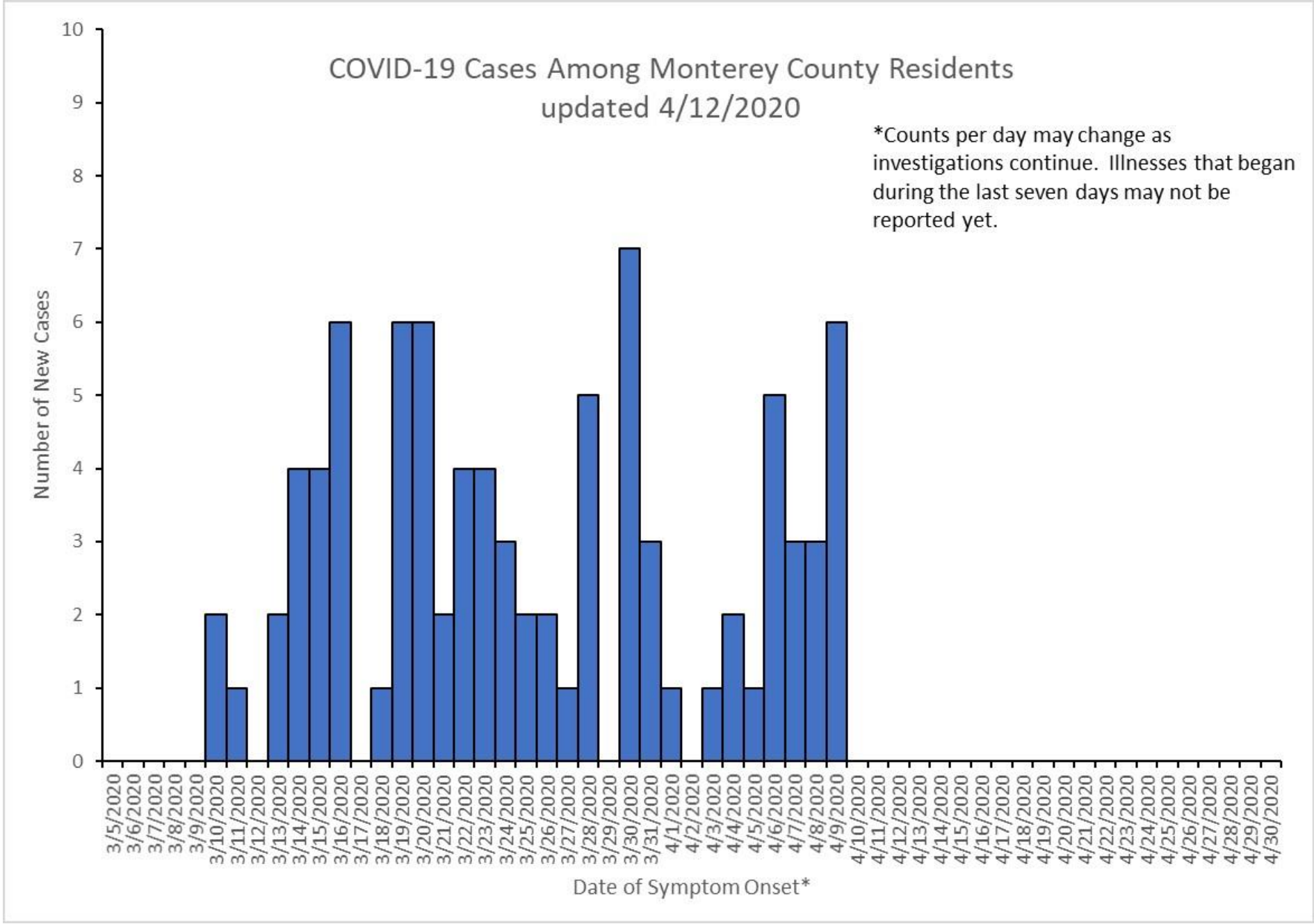
87 Laboratory-confirmed cases

20 Hospitalizations

3 Deaths

43% of confirmed cases have no known pre-existing medical condition that predisposes them to higher risk of severe disease

Almost 550 contacts investigated and placed on home quarantine


COVID-19 Cases Among Monterey County Residents
updated 4/12/2020
*Counts per day may change as investigations continue. Illnesses that began during the last seven days may not be reported yet.
Number of New Cases
0
1
2
3
4
5
6
7
8
9
10
3/5/2020
3/6/2020
3/7/2020
3/8/2020
3/9/2020
3/10/2020
3/11/2020
3/12/2020
3/13/2020
3/14/2020
3/15/2020
3/16/2020
3/17/2020
3/18/2020
3/19/2020
3/20/2020
3/21/2020
3/22/2020
3/23/2020
3/24/2020
3/25/2020
3/26/2020
3/27/2020
3/28/2020
3/29/2020
3/30/2020
3/31/2020
4/1/2020
4/2/2020
4/3/2020
4/4/2020
4/5/2020
4/6/2020
4/7/2020
4/8/2020
4/9/2020
4/10/2020
4/11/2020
4/12/2020
4/13/2020
4/14/2020
4/15/2020
4/16/2020
4/17/2020
4/18/2020
4/19/2020
4/20/2020
4/21/2020
4/22/2020
4/23/2020
4/24/2020
4/25/2020
4/26/2020
4/27/2020
4/28/2020
4/29/2020
4/30/2020
Date of Symptom Onset*

Testing Modalities

Reverse Transcriptase Polymerase Chain Reaction (RT-PCR): Used by CDC, state and local public health labs, and some commercial labs

Cepheid Xpert Nucleic Amplification Assay Test (NAAT): Many hospitals currently have equipment but are missing cartridges specific to SARS-CoV-2; 1-2 tests per hour

Abbott ID Now COVID19: molecular point-of-care test; 5-20 minutes per test; limited number of test kits available

Serologic Testing

Only 1 CLIA-approved serologic test in U.S. to date

Serologic tests measure antibodies to SARS-CoV-2, not the virus itself

May be useful in helping to determine burden of disease on communities and guiding social distancing policy decisions

Serologic Testing

Cannot be used to determine if a person is currently infectious or if a person has COVID-19 disease

Takes time after exposure to create antibodies, causing false-negative results if tested too soon after exposure

Tests currently used without FDA approval may not be able to differentiate between SARS-CoV-2 and strains of seasonal coronavirus, causing false-positive results

Local Testing Capacity

Monterey County Public Health Lab is completing up to 80 tests per day, seven days a week, with 8 to 24 hour turn-around time

Recently received additional test kits to extend testing capacity

Priority testing like outbreaks in skilled nursing facilities increase the rate of testing and deplete testing supplies quicker

Local Testing Capacity

Hospital labs are working closely together to secure supplies for in-house testing, manufacture scare supplies, and set priorities for testing

Commercial laboratory testing is available through ARUP, BioReference, Laboratory Corporation of America, and Quest with a turn-around time of 6 to 14 days

Local Laboratory Testing as of April 12

Laboratory (FDA-Approved Tests)	Positive Results	Negative Results	Total Resulted Tests	Percent of Total Resulted Tests
Monterey County Public Health Laboratory			1,452	75%
Monterey County Residents	71	1,158	1,229	
Other County Residents			223	
Other Public Health Laboratories	1	4	5	<1%
Commercial Laboratories	12	337	349	18%
Hospital Laboratories	3	116	119	6%
Outpatient Clinic Laboratories	0	5	5	<1%
Total	**87**		**1,930**	**100%**

Barriers to Testing

Limitations in the supply of:

Testing reagents and cartridges specific to SARS-CoV-2

Swabs and viral transport media

Microbiologists skilled in DNA extraction and PCR methods

Personal protective equipment

Medical staff trained and willing to collect specimens in the outpatient environment

Purposes of Statistical Models

1. Estimate benefits of social distancing in reducing burden on health care systems

2. Plan for increased resource needs before hospital systems are overwhelmed

Model Limitations

1. Models were developed for areas with large populations and with high burden of disease

2. Models applied to areas with smaller numbers of cases like Monterey County may be less robust

3. Model estimates vary greatly with small changes to model inputs

4. Model estimates improve as the epidemic advances

5. No model can accurately predict complex situations

Models Explored

1. Stanford University – Systems Utilization Research for Stanford Medicine (SURF)

2. University of Washington – Institute for Health Metrics and Evaluation (IHME)

3. University of Pennsylvania – COVID-19 Hospital Impact Model for Epidemics (CHIME)

CHIME Model Inputs

Monterey County population

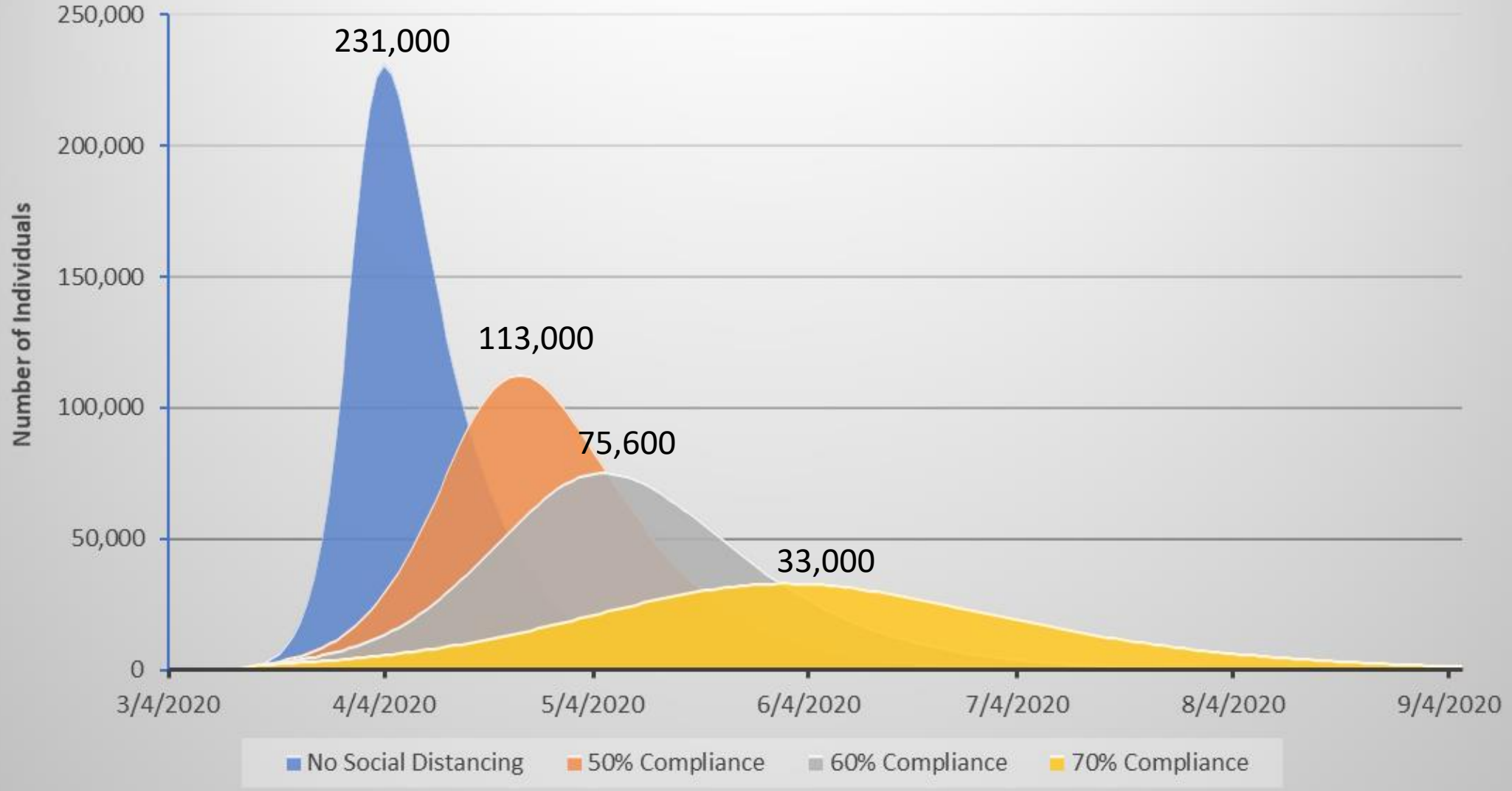
Timing of implementation and level of compliance with social distancing measures

Rate of case doubling at beginning of epidemic

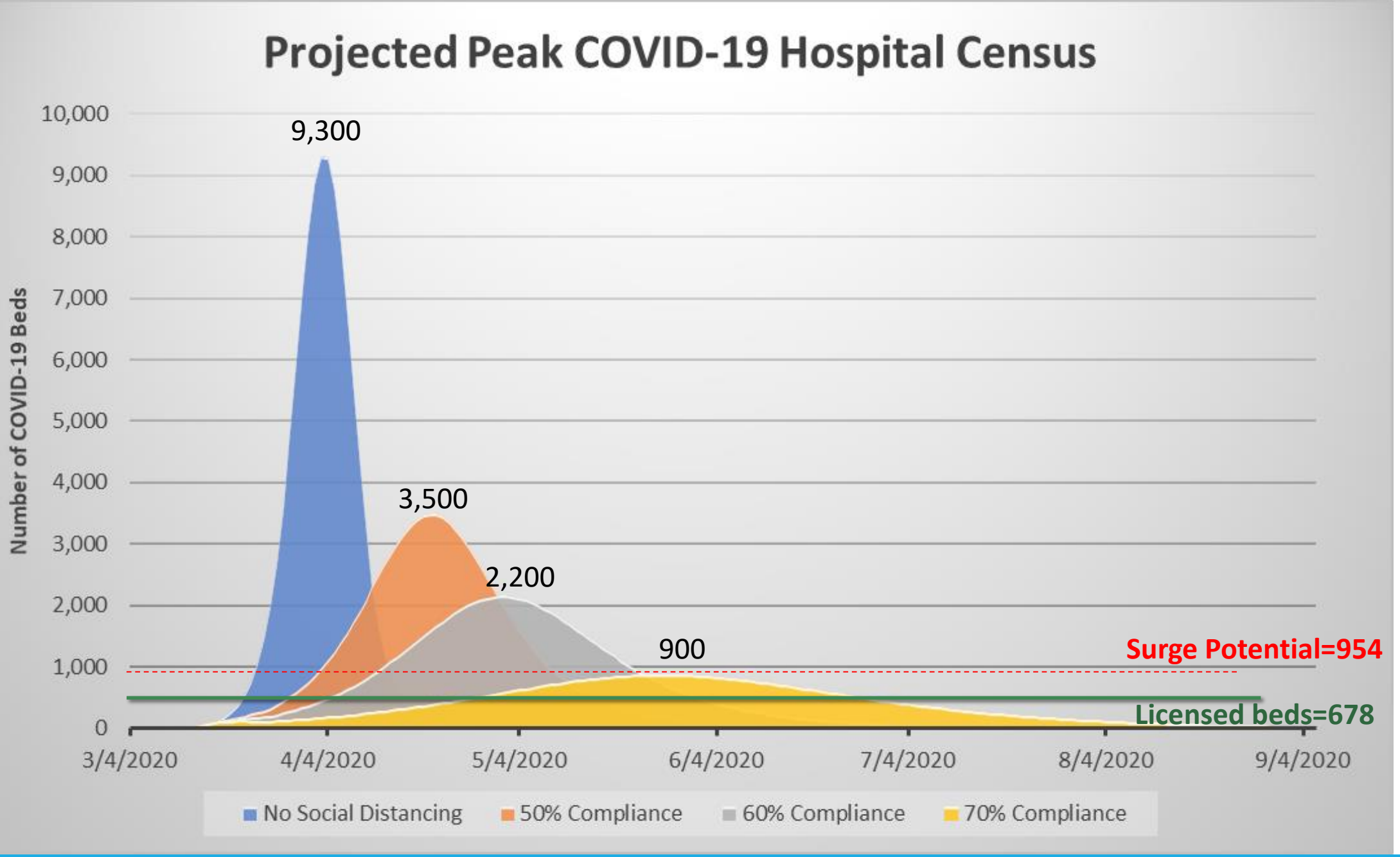
Percent of cases that are hospitalized and number currently hospitalized

Percent of cases that require critical care and mechanical ventilation

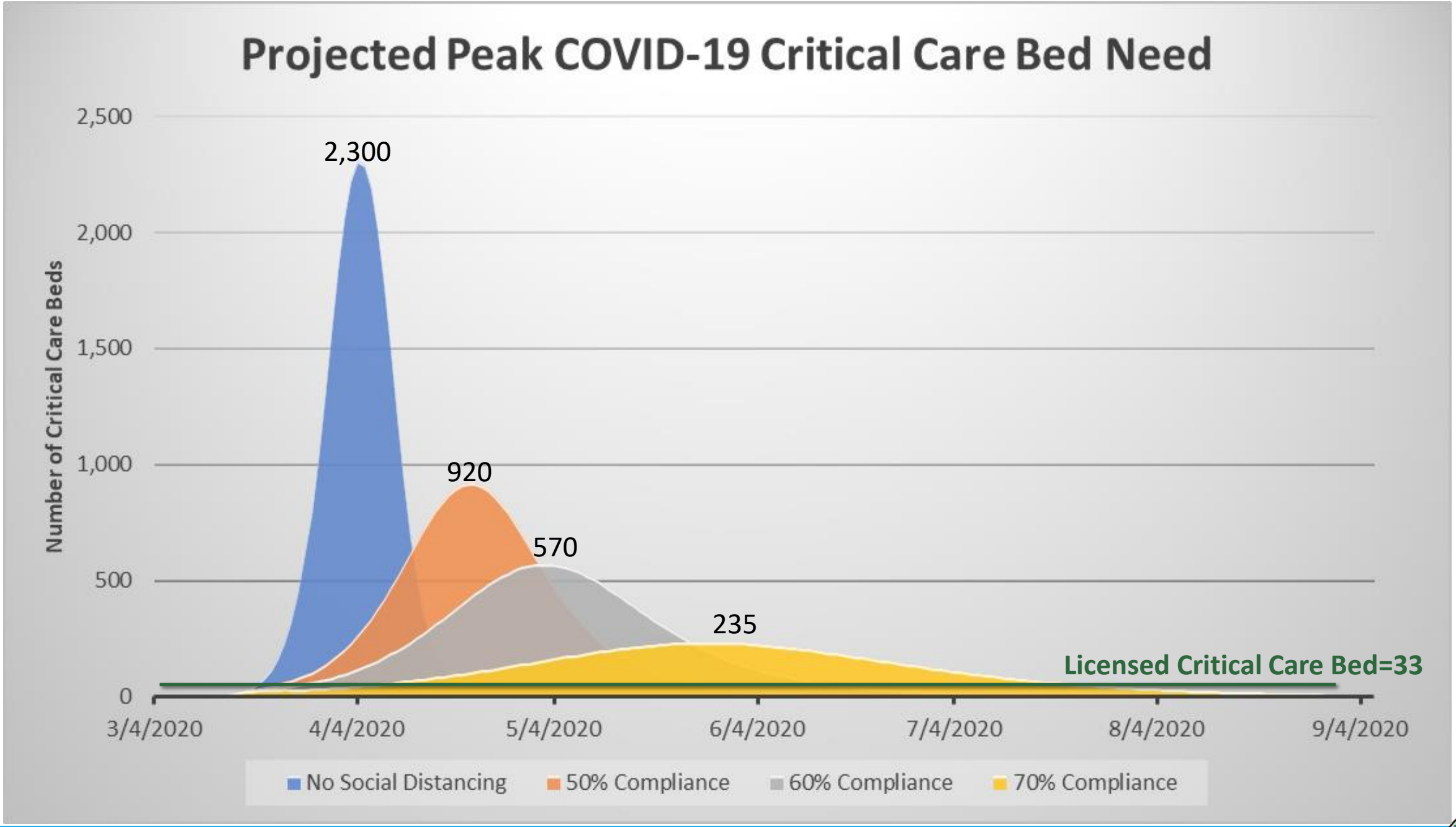
Projected Number of Monterey County Residents Infected with COVID-19 at Peak Epidemic



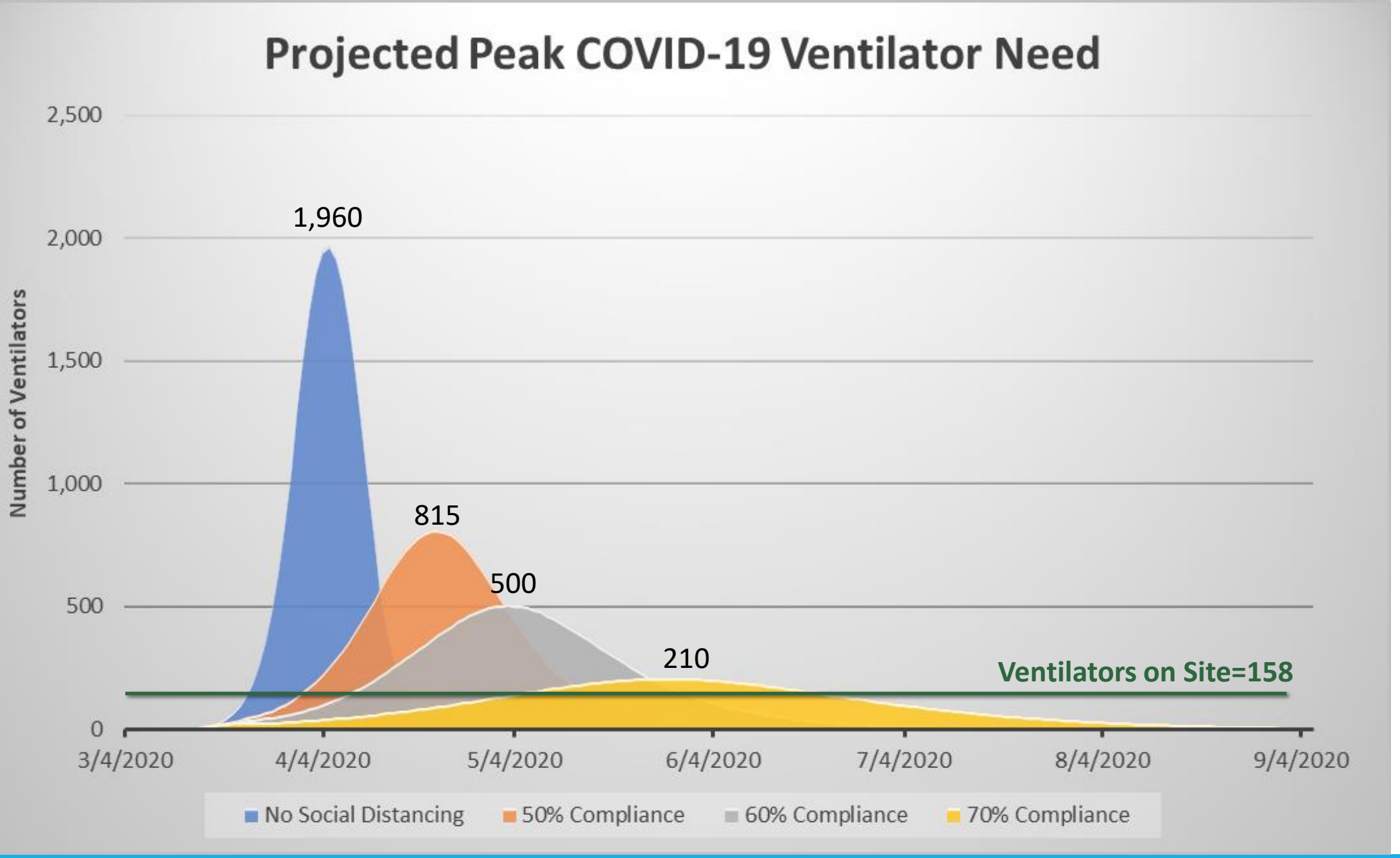
Projected Peak COVID-19 Hospital Census



Projected Peak COVID-19 Critical Care Bed Need



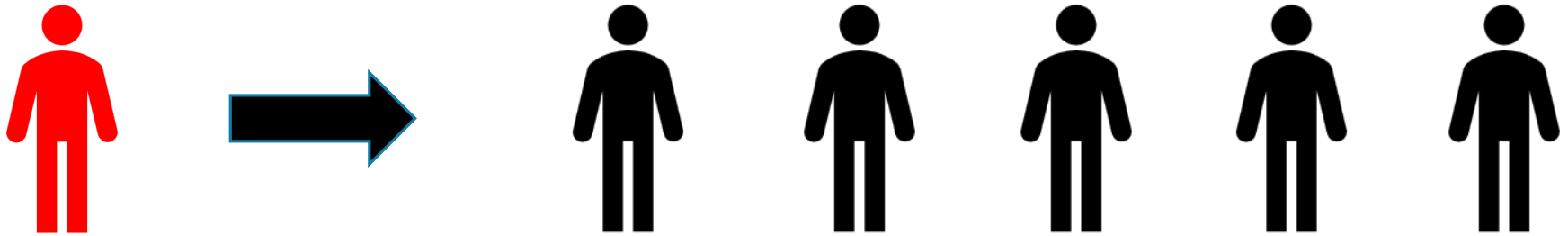
Projected Peak COVID-19 Ventilator Need



Estimated Effect of Social Distancing

No Mitigation: Number of cases doubles every 2.0 days, 1 infected person spreads the disease to 5 others, daily growth rate of 41%.

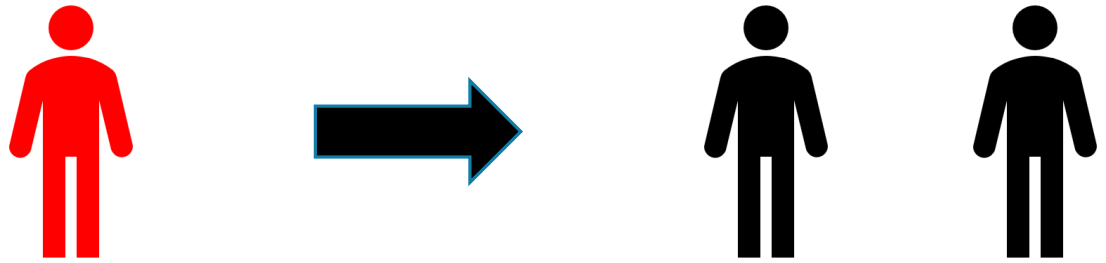
- Doubling rate of 2 days seen in local data before Shelter in Place Order



Estimated Effect of Social Distancing

50% Compliance: 50% reduction in social contact after onset of epidemic reduces doubling time to 4.8 days, R_t declines to 2.6 people per 1 case, and slows daily growth rate to 16%.

- Local data shows doubling rate ranged from 3 to 6 days from March 15 to March 30
- Community efforts have been successful in slowing the spread of disease



Local Hospital Care and Surge Capacity

Hospitals have been planning for surge for several years and specifically for this event since early January

Hospital staff coordinate collaborative calls at least twice weekly across the healthcare system

Hospital staff provide guidance and trainings to local outpatient providers and congregate living facilities

Hospital subject matter experts participate in the Monterey County Emergency Operations Center, provide technical advice, and help plan alternate care sites

Ongoing Containment Measures

1. Implementation of and adherence to Health Officer Order to Shelter in Place

2. Health care provider and laboratory reporting of suspected cases of COVID-19

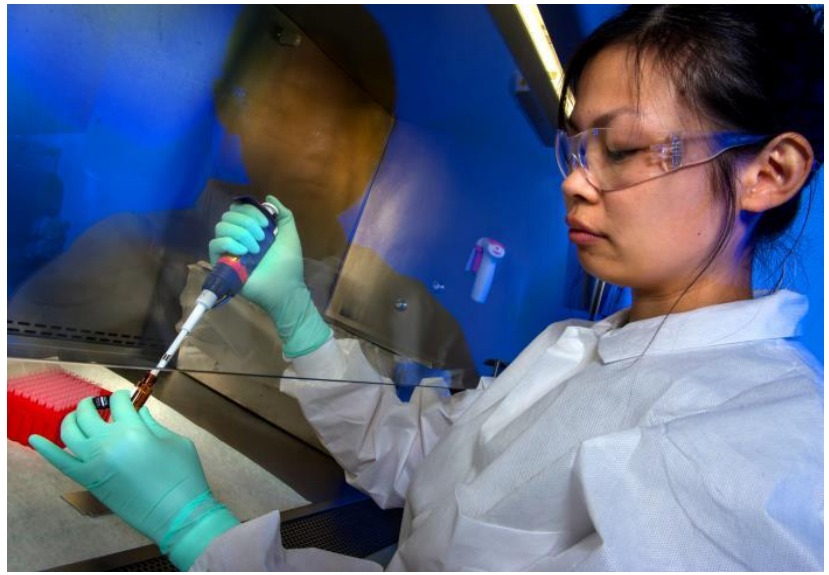
3. Investigations of diagnosed cases and their contacts

Ongoing Containment Measures

4. Home isolation and quarantine to prevent further spread

5. Fast turn-around times for testing at Public Health Laboratory to guide hospital infection control decisions

6. Screening procedures at hospitals and outpatient care locations to quickly identify and isolate individuals with respiratory symptoms



Case Investigations & Contact Tracing

Identify and get in touch with every person diagnosed with COVID-19

Interview cases to identify all individuals with whom cases have had contact during the case's infectious period

Get in touch with every contact elicited as part of the investigation process

Test all contacts for COVID-19

Case Investigations & Contact Tracing

Isolate ill individuals and COVID-19 positive individuals; conduct new case investigations for each of them

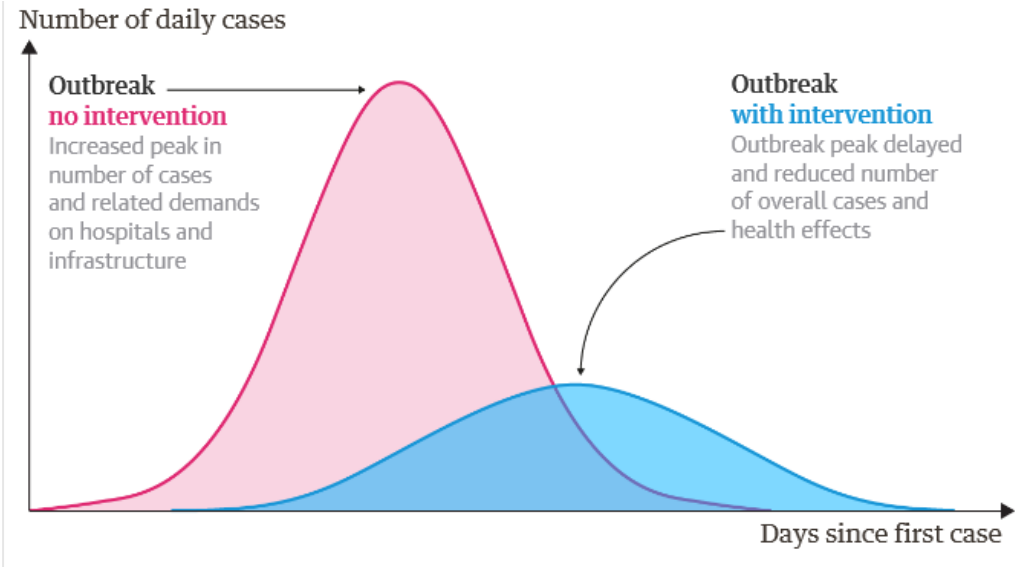
Quarantine all asymptomatic and COVID-19 contacts through their incubation period

Highly resource-intensive process (staff, PPE, testing)

De-escalation Planning

Early local data demonstrates the community's efforts to increase social distancing has helped "bend the curve" and avoid large hospital surges

Social distancing has both social and economic impacts



De-escalation Planning

Regional Health Officers and Health Directors are now reviewing impacts of containment and social distancing strategies to develop criteria that could be used in deciding when Shelter in Place orders could be modified to be less restrictive for certain populations

Requires a balance between the social and economic benefits of modified Orders, the impact of COVID-19 on vulnerable populations that have not yet been infected, and the impact on the health care system

Key Messages

1. Models are a tool to assist with preparedness planning but must be interpreted and utilized carefully. Models likely overestimate scale but appear to reflect local effects of social distancing.

2. Social distancing measures implemented early in the local epidemic appear to have reduce the rate of spread of COVID-19 locally.

3. Stricter measures and additional compliance with social distancing may help prevent local health care systems from being overwhelmed with a surge of patients requiring hospitalization and critical care.

4. Planning efforts are underway to prepare for future potential surges and the recovery phase of epidemic.

Questions?

COUNTY OF MONTEREY
HEALTH DEPARTMENT
http://www.mtyhd.org/covid19

COVID-19
Information Call Center

(831)769-8700 or (831)755-4521
Monday - Friday 8 AM - 5 PM