



Addressing COVID-19 Concerns

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A blue pushpin is pinned to a white notepad with horizontal lines. The notepad is placed on a brown corkboard. The word "Disclosure" is written in a large, bold, black font across the middle of the notepad. The word "Dis" is on the left, and "closure" is on the right, with a light beige rectangular background behind the "closure" part.

Disclosure

Dr. Birnbaumer has no conflicts of
interest

A close-up photograph of a person's hand holding a small, light blue rectangular card. The card is tilted slightly to the right. The word "Changes" is written on the card in a large, blue, cursive script. The hand is positioned on the left side of the frame, with the thumb and index finger gripping the card. The background is a plain, light color.

Changes



COVID-19 **PANDEMIC**

UNPRECEDENTED

Resources factor into what we do



N95 masks

Paralytic Agents

Gowns



OUT OF STOCK

Viral Filters

**Videoscope
Handle Covers**

Sedatives



Shuttered medical practices

UNPRECEDENTED

Resources factor into what we do

Factor in exposure of HCWs

A cartoon illustration of a yellow chicken standing inside a wire mesh cage. The cage is positioned within a dark, jagged cave opening. The chicken has a sad expression and is looking out. A speech bubble from the chicken contains the text: "IT'S GETTING DARK... COLD... GOODBYE CRUEL WORLD...". The background outside the cave is light gray with some small dots and lines suggesting a rocky or snowy environment. A red vertical bar is visible in the top right corner of the image.

IT'S GETTING DARK...
COLD... GOODBYE
CRUEL WORLD...

Chuter

worst-jobs.com

UNPRECEDENTED

Resources factor into what we do

Factor in exposure of HCWs

Changes almost daily

- CDC recommendations and guidelines change frequently



Changes

- State and local sites useful
 - e.g. LAHAN in L.A.

UNPRECEDENTED

Resources factor into what we do

Factor in exposure of HCWs

Changes almost daily

Information overload

Prepublication – medical pubs

Social media

News cycle



“There is no emergency
in a pandemic...”

Objectives



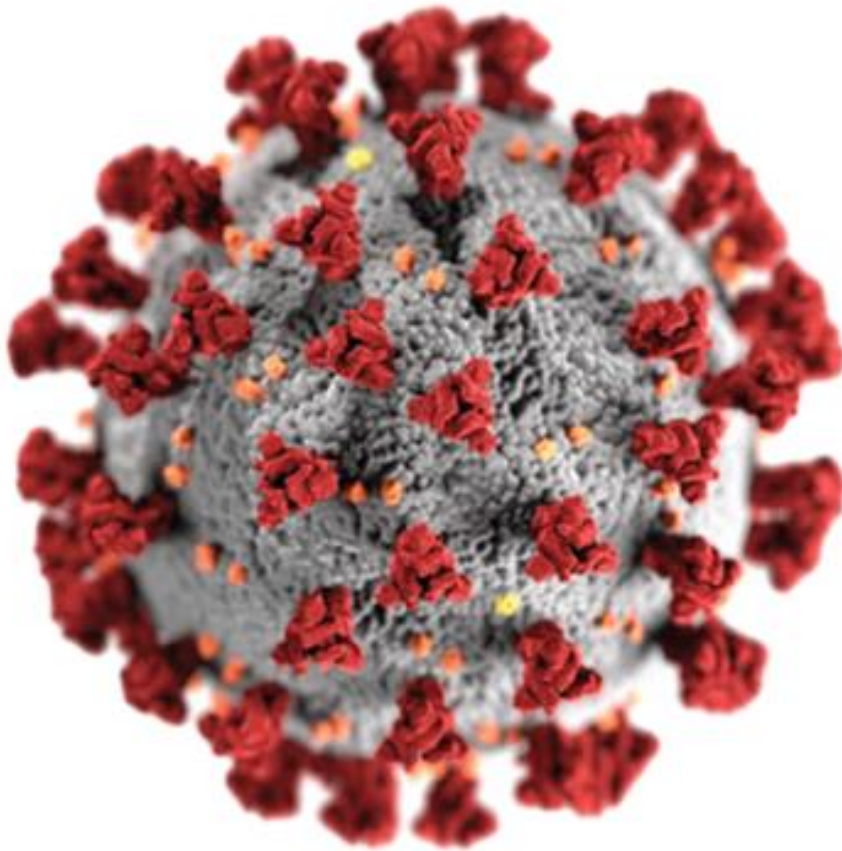
- The evolving spectrum of patient presentations
- Testing strategies – PCR? Antigen? Antibodies?
- What to tell your friends, family and patients
- Safe practices for patient and staff flow when reopening an office

COVID-19

WHAT YOU **NEED** TO KNOW

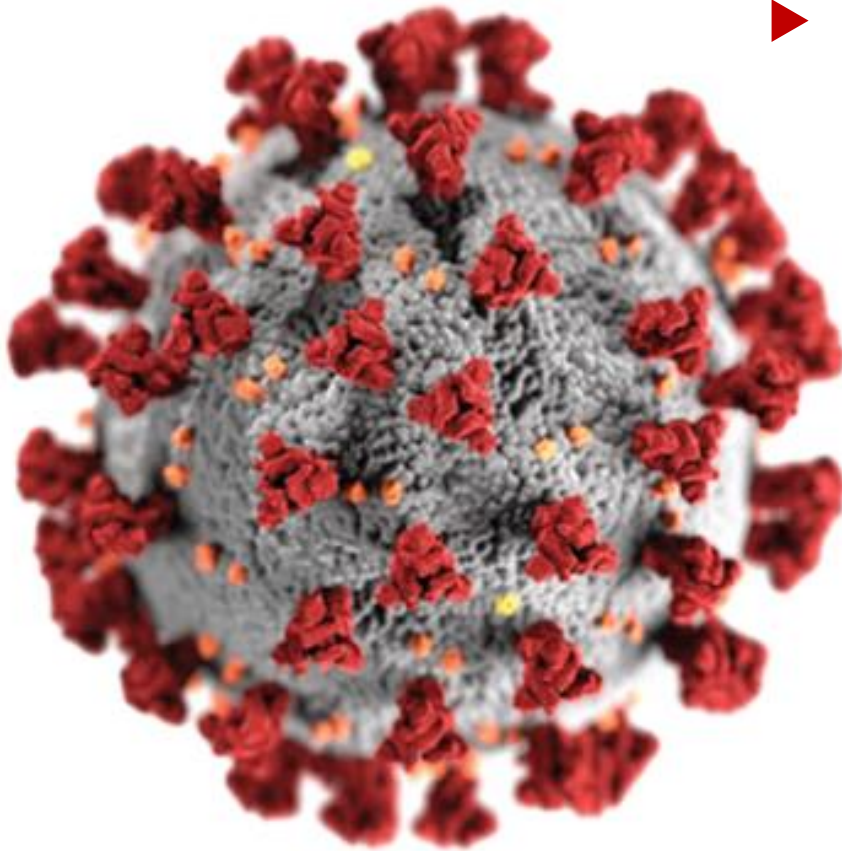
- ▶ The COVID clinical presentation
 - ▶ Especially what is pertinent to your practice setting
- ▶ How to evaluate suspected COVID patients
- ▶ Appropriate use to testing in COVID patients
- ▶ Disposition of suspected or confirmed COVID
 - ▶ Home or hospital?
 - ▶ How to follow outpatients?
 - ▶ Instructions re: quarantine or isolation
- ▶ Considerations in re-opening an office-based practice

The Evolving Clinical Spectrum of COVID



- ▶ Incubation period to symptom development is 2-14 days
 - ▶ Median time onset: 4-5 days
 - ▶ 97% symptomatic by day 11
- ▶ ~ 35-40% of patients will not develop symptoms

The Evolving Clinical Spectrum of COVID



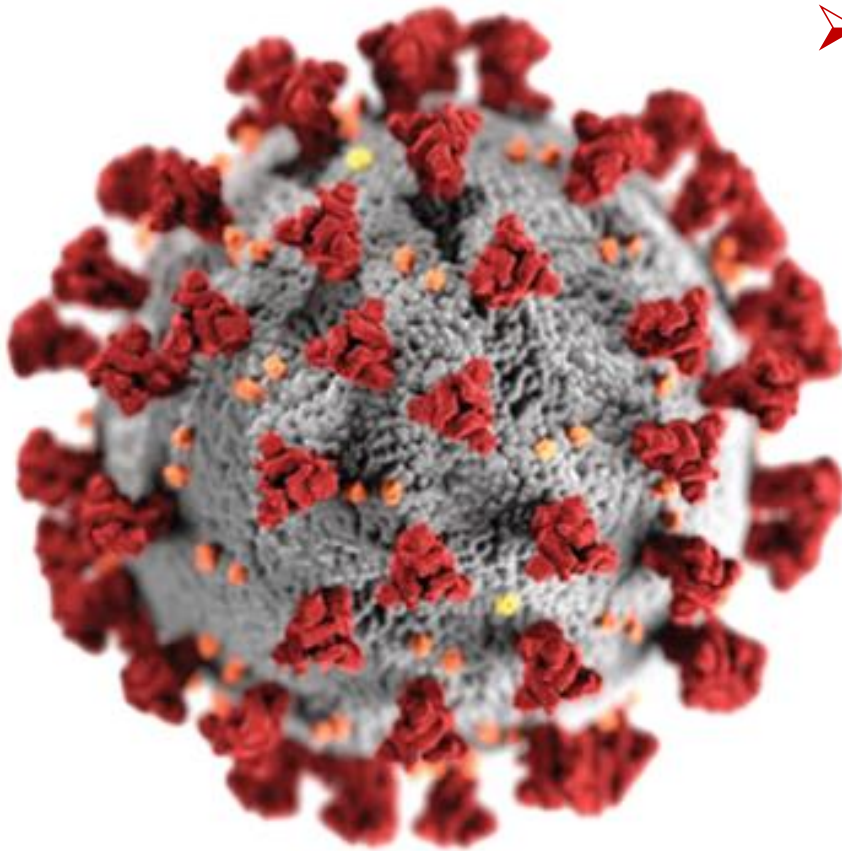
- ▶ Initial symptoms
 - ▶ Fever, cough, shortness of breath, myalgias, malaise, headache, sore throat, chills, shaking chills
 - ▶ Anorexia, nausea/vomiting, diarrhea
 - ▶ Anosmia (68%), ageusia (71%) very suggestive

“COVID Toes”

- Mostly children and young adults
- Purple, pink, red or blue lesions on toes; resembles pernio (chilblains) or frostbite-like
- COVID tests may be negative initially
- May not have other characteristic symptoms

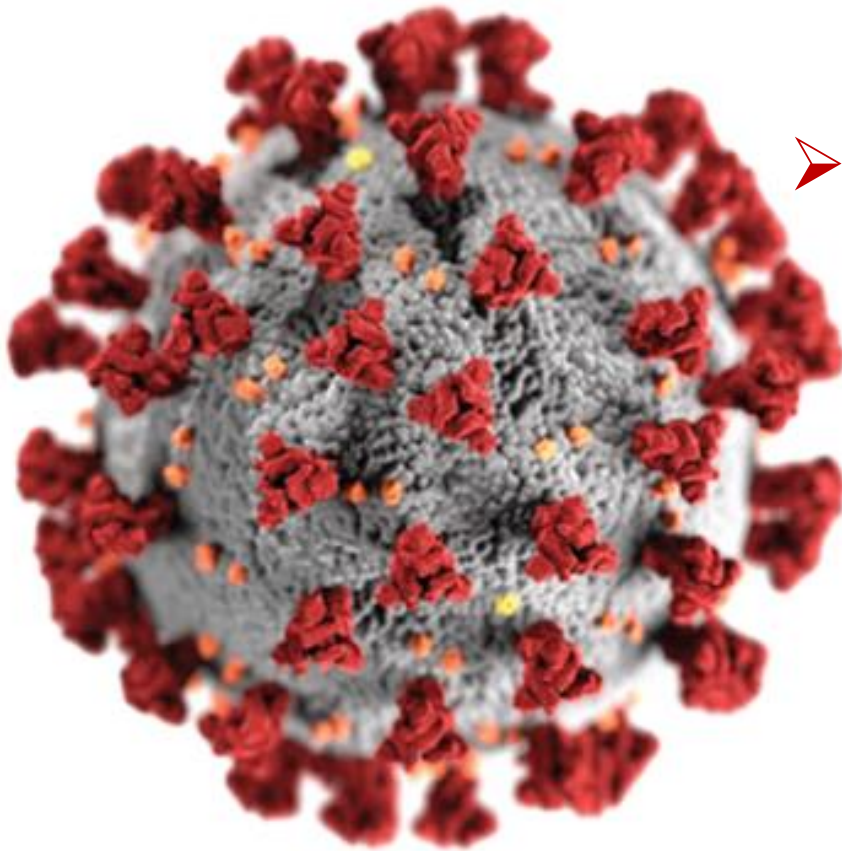


The Evolving Clinical Spectrum of COVID



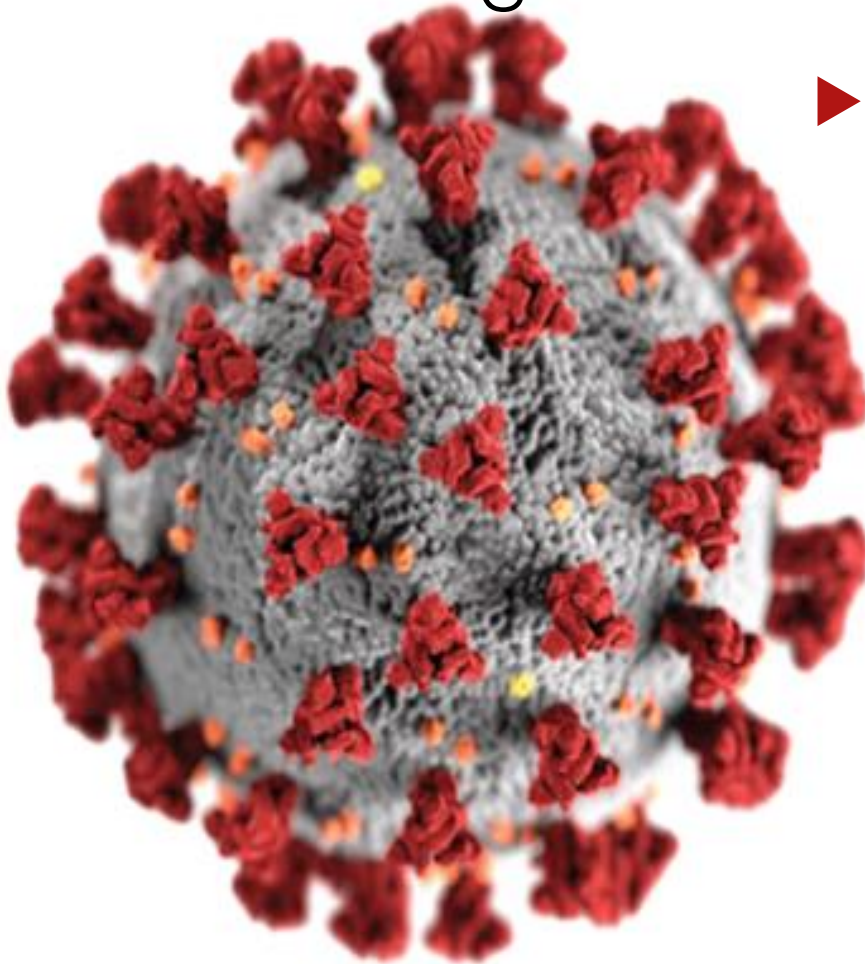
- Shortness of breath usually develops median of 5-8 days
 - Suggestive of worsening disease
 - Risk factors
 - Older age
 - CV disease
 - Chronic lung disease
 - HTN
 - DM
 - Obesity

The Evolving Clinical Spectrum of COVID



- Course of disease
 - 80% have mild to moderate illness
 - May have mild pneumonia
 - 15% severe illness
 - 5% critical illness

The Evolving Clinical Spectrum of COVID



► Mortality

- Higher than seasonal flu
- Exact numbers not clear yet (0.4%?)
 - Reporting issues
 - “Case” definition
- Comorbidities, age increase risk of death

Can We Predict the Probability of Critical Illness?

- 10 variables found in study from China (N=1590)
 - Age
 - Number of morbidities; cancer history
 - Hemoptysis, dyspnea, unconsciousness
 - Neutrophil-to-lymphocyte ratio, LDH level, direct bilirubin level
 - Abnormal CXR
- Calculates a score
- Unclear utility

JAMA Internal Medicine, May 12, 2020

<https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2766086>

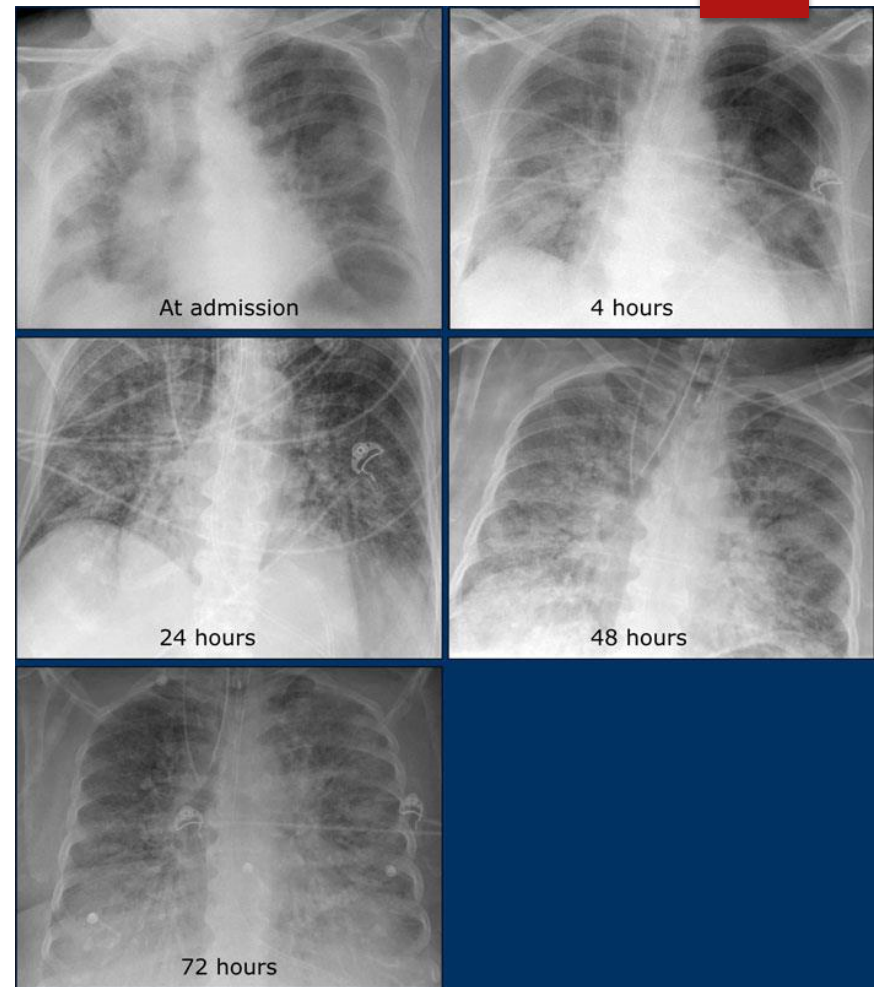


COVID: The Evolving Spectrum of Patient Presentations

- Respiratory failure
- Blood clotting
- Renal failure
- Encephalopathy
- Strokes – large vessel, younger patients, no risk factors
- Cardiomyopathy, myocardial infarction
- ? Guillain-Barre-type

Respiratory Failure

- Most common severe complication
- May require supplemental oxygenation / respiratory support



Blood Clotting

- Common
- D-dimers can be very high
- Clots form everywhere, but PE highly problematic



COVID: The Evolving Spectrum of Patient Presentations

- Renal failure
 - Clots vs. perfusion
- Cardiac
 - Cardiomyopathy, CHF, dysrhythmias, AMI
- Strokes
 - Large vessel, younger patients, no risk factors
- Encephalopathy
 - Confusion, altered mental states
- GI Tract – ICU observational data
 - Ischemia/infarction, pneumatosis, portal gas
- Guillain-Barre-type syndrome?



Children are significantly less affected by COVID than adults

“Medically complex” children may get seriously ill

COVID: The Evolving Spectrum of Patient Presentations

- Multisystem Inflammatory Syndrome – COVID (MIS-C)
 - Children; 5-15 years * old most frequently
 - Rare
 - “Kawasaki’s plus toxic shock”
 - Fever, variable rash, conjunctivitis, peripheral edema, generalized extremity pain, abdominal pain, diarrhea, vomiting
 - Multiorgan involvement / failure
 - Labs: Elevated C-reactive protein, procalcitonin, ferritin, triglycerides, d-dimer

COVID: The Evolving Spectrum of Patient Presentations

- Multisystem Inflammatory Syndrome – COVID (MIS-C)
 - May progress to warm shock not responsive to volume; often need **vasopressors** (norepinephrine)
 - Often no significant respiratory involvement (but may need mechanical ventilation for cardiovascular stabilization)
 - Many did not test positive for SARS-CoV-2 initially; most develop antibody
 - Echo shows coronary vessel inflammation; may see aneurysm

COVID: The Evolving Spectrum of Patient Presentations

- Multisystem Inflammatory Syndrome – COVID (MIS-C)
 - CDC case definition (report to health dept)
 - Age < 21 years
 - Fever (> 38C or subjective for ≥24 hrs)
 - Lab evidence of inflammation (defined)
 - Clinically severe illness requiring hospitalization
 - Multisystem (> 2) involvement: Cardiac, renal, respiratory, hematologic, gastrointestinal, dermatologic, neurological), AND
 - No alternative plausible diagnoses, AND
 - Positive for current or recent SARS-CoV-2 infection or exposure within the 4 weeks prior to symptoms

Two New Pediatric Syndromes?

WHAT'S

NEW

- May 22, 2020
 - Pediatric immune thrombocytopenia
 - Pediatric subacute thyroiditis

COVID: The Evolving Spectrum of Patient Presentations

- Median time from illness onset to recovery is around 2 weeks (WHO)
 - Can be 3-6 weeks for severe / critical illness
- Viral Shedding?
 - Asymptomatic?
 - 8 days (May 28 JAMA Network Open)
 - Symptomatic?
 - 19 days (May 28 JAMA Network Open)

COVID: The Evolving Spectrum of Patient Presentations

- Post-COVID Infection
 - As of mid-May, 230,000 people in U.S. have “recovered”
 - Symptoms can persist for many weeks... perhaps months
 - Fever, weakness, fatigue, shortness of breath, tachycardia, rash, anxiety, chest pressure, difficulty concentrating, diarrhea, difficulty concentrating
 - No data yet on long-term sequelae
 - Patient may need prolonged sick leave
 - PCR viral testing can remain positive for up to and perhaps longer than 4 weeks

COVID: The Evolving Spectrum of Patient Presentations

- Post-COVID Infection - patient status?
 - Antibodies will develop in virtually all patients
 - Unclear if protective
 - If protective, not clear how long
 - Not sure what happens if re-challenged with SARS-CoV-2
 - Immunity may be multifactorial
 - Antibodies? T cell immunity?

COVID-19

Testing



let's *face* it



**hot
mess**

ISSUES

- ▶ Lots of different types of tests out there
 - ▶ Many received EUA – being dialed back by FDA
- ▶ Turnaround time ranges from minutes to days... even over a week
- ▶ Testing sensitivities and specificities vary
 - ▶ CDC test – 100% sensitive (but send out, takes a long time)
 - ▶ Roche test – 96.5% sensitive
 - ▶ Cepheid – less than 1 hour - 98.2% sensitive
 - ▶ ID Now – fast (15 min) – 85% sensitivity (15% false negative)
 - ▶ DiaSorin Simplexa – 89.3% sensitive (11% false negative)

Population Testing vs. Individual Testing



Prevalence of infection
Mortality rates
Infection control
Disease mitigation

**Can absorb some false
negatives and positives**

Accurate diagnosis
Appropriate isolation
Minimizing exposures
Defining treatment plans

**Want maximum
sensitivity and specificity**

ISSUES

- Does it matter where the sample comes from?
- YES, IT DOES
 - Much lower sensitivity for oral sampling compared to nasopharyngeal, mid-turbinate, or nasal sampling
 - Average sensitivities
 - Mid-turbinate – 100%
 - Nasopharyngeal – 97%
 - Nasal sampling – 95%
 - Saliva – 85% (but new... still waiting conclusive data)
 - Oral – 56%

ISSUES

- ▶ Rules as to who gets a test have changed, sometimes daily
- ▶ If no test and high suspicion... just call it COVID?
 - ▶ Overdiagnosis ranges from 68%-92%
 - ▶ So what's the big deal?
 - ▶ Unnecessary time in quarantine
 - ▶ May stop taking appropriate safety precautions when resolved

A black and white photograph showing a healthcare worker in full personal protective equipment (PPE), including a face shield, goggles, a respirator mask, and gloves, performing a nasal swab test on a patient. The patient is lying down with their mouth open. The background is blurred, suggesting a clinical setting. A solid red vertical bar is located in the top right corner of the image.

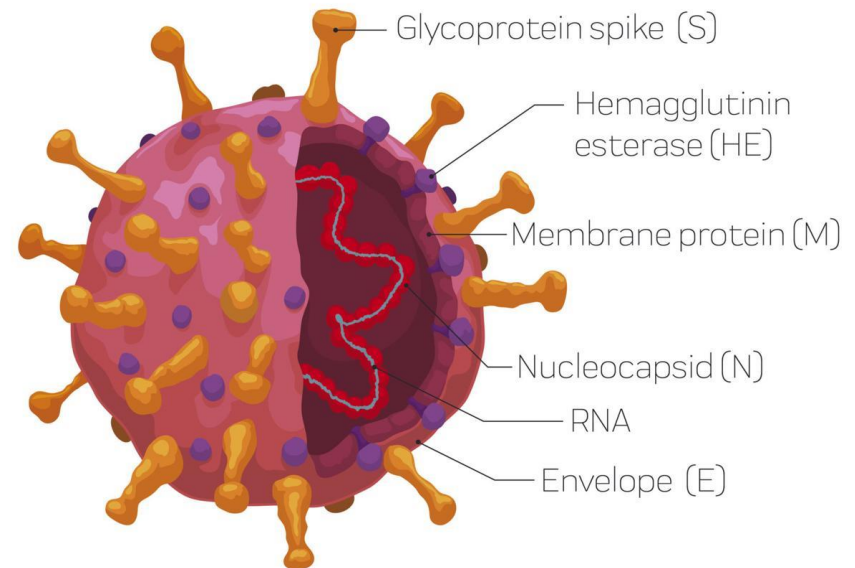
Testing is important
- BUT -
Interpretation of the test
results can be tricky

Viral RNA Testing (RT-PCR)

- Most are PCR tests based on virus component detection
- Are the most commonly used tests and are considered most reliable
 - If FDA EUR-approved test used
- Specimens vary
 - Nasopharyngeal swabs
 - Throat swab
 - Tongue swab
 - Saliva
 - Sputum, bronchoalveolar lavage fluid

Viral RNA Testing (RT-PCR)

- Target various parts of the RNA of the virus
 - Envelope (env)
 - Nucleocapsid (NC)
 - Spike (S)
 - RNA-dependent RNA polymerase (RdRp)
 - ORF1 genes



CORONAVIRUS STRUCTURE

Viral RNA Testing (RT-PCR)

- Most have decent sensitivities, but can be variable
 - **In symptomatic patients, false negative rate can be as high as 30%**
 - Specimen gathering issues (site, technique)
 - Transport medium issues
 - Test characteristic issues
 - Incubation period?
- Positive tests may persist beyond 3 weeks after illness onset
 - Particularly if patient is/was very ill

Antigen Testing

- Received EUA May 8, 2020
 - Quidel Sofia 2 SARS Antigen FIA
 - 15-minute turnaround time
 - Lateral flow immunofluorescent assay
 - Detects SARS-CoV-2 viral proteins
 - **Nasopharyngeal** swabs (done like PCR testing)
 - Done POC (requires CLIA waiver); has own benchtop analyzer
 - Sensitivity: 80% (related to PCR testing); specificity ~100%
 - NPV: 88%
 - Does not appear to have significant cross-reactivity with other viruses
 - Negative results DO NOT rule out infection
 - May need additional, more sensitive PCR test to rule out infection



At-Home Testing

- April 2020
 - Pixel by LabCorp COVID-19 Test home collection kit
 - A RT-PCR home kit
 - **Nasal swab** / saline; gets mailed overnight to LabCorp



At-Home Testing

- May 8, 2020
 - Home **saliva** test
 - Done **by prescription** only at this time
 - Rutgers Clinical Genomics Laboratory LDT
 - Uses Spectrum Solutions LLC SDNA-1000 Saliva Collection Device
 - Home collected saliva specimen; **mailed overnight** to Rutgers Clinical Genomics Laboratory for testing



At-Home Testing

- May 2020
 - Everlywell – **nasal swab** testing kit that can be used with multiple different coronavirus tests
 - Users need to have been screened using an **online questionnaire that is reviewed by a HCW**
 - **Self-collected nasal sample** place in saline tube; mailed overnight to one of two labs running approved tests
 - Fulgent Therapeutics
 - Assurance Scientific Laboratories
 - Only authorized to use with 2 COVID-19 tests by FDA; others may be approved in the future





Viral RNA Testing (RT-PCR)

- “Positive test”
 - Likely true positive with most tests
 - Recovered? More than three weeks after first positive PCR?
 - May indicate only viral particles and not viable virus



NEGATIVE
POSITIVE



Viral RNA Testing (RT-PCR)

- “Negative test”
 - Needs to be put in context of the patient
 - Symptomatic patient?
 - May be false negative – up to 30% in some tests
 - Asymptomatic? No exposure risks?
 - Likely true negative; may be in window
 - Asymptomatic, significant risk of exposure
 - Could be in 2-day pre-symptom window; self-quarantine for 3-5 days
 - If develop symptoms, retest

PCR Testing Interpretation

PCR	
Positive	Likely active COVID infection Infectious to others Home isolation Strict health instructions Close follow-up HCW? Follow protocol

PCR Testing Interpretation

PCR	
Positive	Likely active COVID infection Infectious to others Home isolation Strict health instructions Close follow-up HCW? Follow protocol
Negative	Depends on symptoms Asymptomatic? Not infected, OR incubating Symptomatic? Consider to be false negative and advise / follow accordingly

COVID Antibody Testing



How long will immunity last?

How strong is the immune response ?



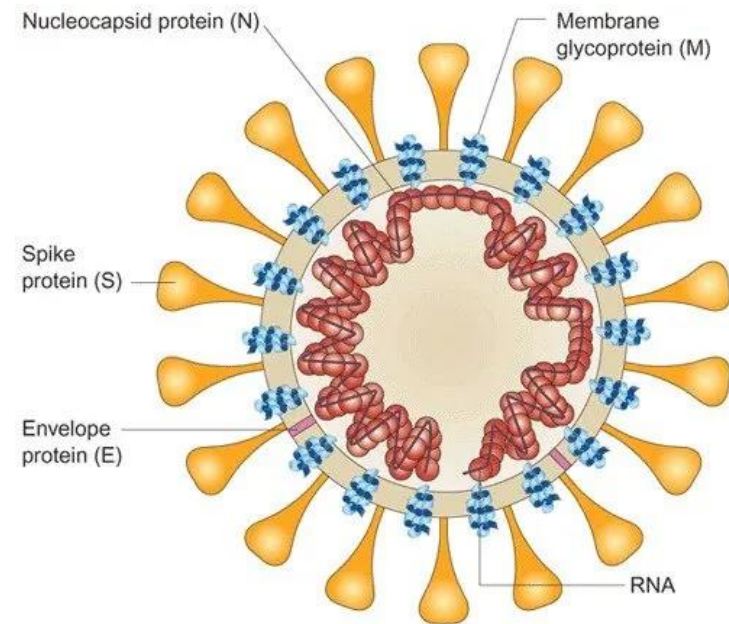
Oh, yeah, and how good are the tests, anyway?



Which antibodies are “neutralizing antibodies”?

Antibody Testing Issues

- Different tests target different COVID antigens
- Can detect IgA, IgM and IgG
- Emergency use authorization?
 - **FDA has removed 27 vendors from the list of available tests – no longer available**



Antibody Testing

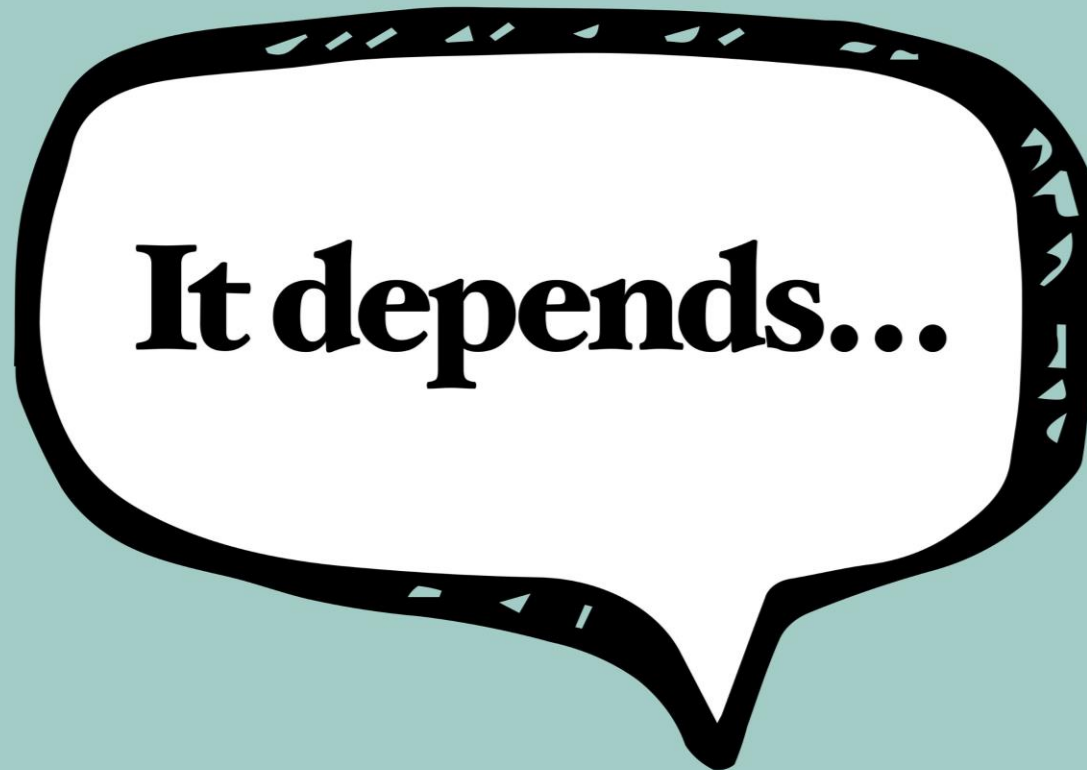
- Currently, best uses for antibody testing
 - Determine if someone is a possible plasma donor (convalescent plasma treatment)
 - Population studies to determine seroprevalence
 - As part of testing plan by experts, used along with other clinical / laboratory information

Antibody Issues

- Antibodies seem to develop if patient has COVID regardless of symptom severity
 - One study suggested 30% did not mount a response – likely do develop them later
- Can take up to 3-4 weeks to develop antibodies
 - Testing too early may be falsely negative for antibodies
- Unclear if antibodies are protective
 - Physical distanced still recommended
- Unclear if Ab positive patients can get reinfected... and how sick will they be?

**87.2% of
people hate
statistics.**

**Recommended to do BOTH a viral PCR
test AND the antibody test... or no antibody test AT ALL**



**Some tests have cross-reactivity with non-COVID-19
coronaviruses (common cold)**

Antibody Testing

- Range of sensitivities and specificities
 - Prevalence makes a difference
 - Low prevalence, positive antibody?
 - Increases likelihood of result being false positive
 - Even with highly performing tests
- Advisable to do viral PCR testing in addition to antibody testing

PCR Plus Antibody Testing

PCR	Antibody	Interpretation
Positive	Positive	Current COVID infection Infectious to others

PCR Plus Antibody Testing

PCR	Antibody	Interpretation
Positive	Positive	Current COVID infection Infectious to others
Positive	Negative	Current COVID infection Infectious to other

PCR Plus Antibody Testing

PCR	Antibody	Interpretation
Positive	Positive	Current COVID infection Infectious to others
Positive	Negative	Current COVID infection Infectious to other
Negative	Positive	“Recovered COVID infection”... maybe Unclear infectivity

PCR Plus Antibody Testing

PCR	Antibody	Interpretation
Positive	Positive	Current COVID infection Infectious to others
Positive	Negative	Current COVID infection Infectious to other
Negative	Positive	“Recovered COVID infection”... maybe Unclear infectivity
Negative	Negative	No current or past COVID infection Can get COVID

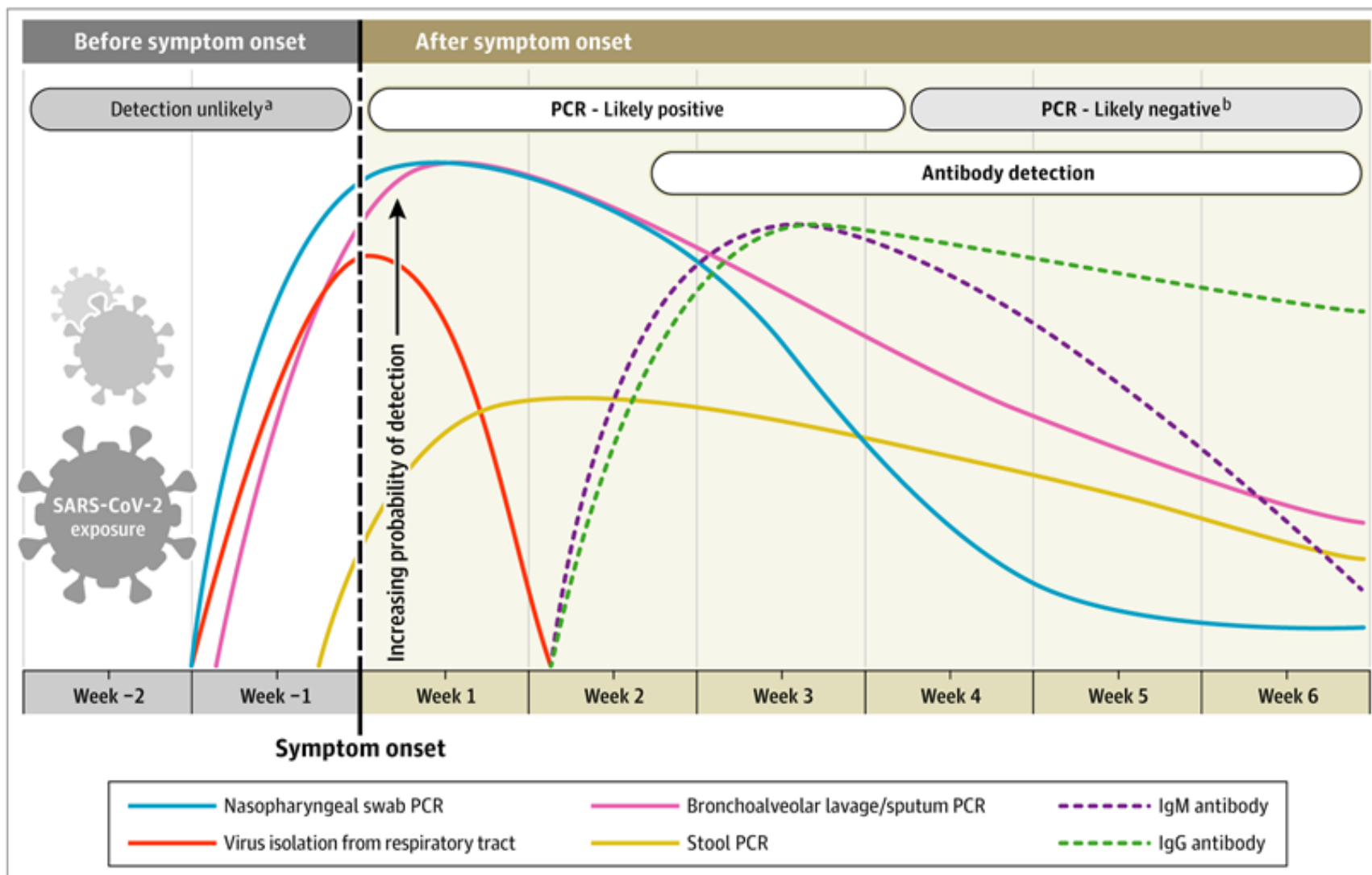
PASSPORT?



***United States
of America***



- Antibody positive?
 - May not be immune
 - Unclear if can carry and transmit the virus
 - Not sure how long it lasts
 - Unclear what happens if patient gets virus again
 - Societal issues using antibody this way?



COVID Testing



- Why not just test everyone?
 - There just aren't enough tests
 - Leads to much confusion
 - Indications for testing sometimes changes sometimes daily
 - Has loosened up a bit lately with more tests available
 - May still need to be limited if tests / swabs / etc become limited

COVID Testing: Who Needs a Test?

(May 11, 2020)

- CDC recommendations (if limited tests)
 - Priority 1 – Hospitalized patients, symptomatic healthcare workers
 - Priority 2 – SYMPTOMATIC long-term facility residents, patients over age 65, patients with underlying medical conditions
 - Priority 3 – Critical infrastructure workers, symptomatic people, first care responders and healthcare workers
 - Non-priority – asymptomatic individuals

COVID Testing: Who Needs a Test?

(May 11, 2020)

- High Probability Patients
 - Fever (>100.4) AND (cough OR shortness of breath) AND NOT requiring hospitalization AND
 - Healthcare worker, OR
 - Works/lives in a group environment... - OR -
 - Symptoms of acute respiratory infection (does not require fever) AND requiring hospitalization (without alternative diagnosis)
 - If will change management, consider if >65 with chronic heart / lung disease OR immunosuppressed

COVID Testing: Who Needs a Test?

(May 11, 2020)

- New inclusion – **hospitalized**
 - Unexplained fever in ED (if admitting patient)
 - New unexplained altered mental status, especially in the elderly
 - Unexplained thrombotic or vasculitic event
 - Patients from SNF or long-term care facility

COVID Testing: Who Needs a Test?

(May 11, 2020)

- **Outpatient** testing recommendations
 - Cough, OR
 - Shortness of breath, OR
 - Any two of the following:
 - Fever (> 100.4)
 - Chills
 - Repeated shaking with chills
 - Muscle pain
 - Headache
 - Sore throat
 - New loss of sense of taste or smell

COVID Testing: Who Needs a Test?

(May 11, 2020)

- Where should you test these patients?
 - Optimally, centralized location
 - Refer to local testing center (call first, appropriate transportation)
 - Coordinate within your system to set up a testing location
 - Can test in your office, but assure appropriate PPE, sanitizing measure taken
 - Send home with home isolation / quarantine instructions *

* <https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/steps-when-sick.html>



SUMMARY

- It's a bit of a mess
- FDA oversight improving
- Use the tests appropriately



COVID19: What To Tell Your Friends, Family and Patients

"I'm young,
so I won't get
sick if I get it."

"Wearing a mask /
physical distancing is
(fill in the blank)"

"My virus test is
negative so I don't
have it."

"The numbers of
deaths are
overblown."

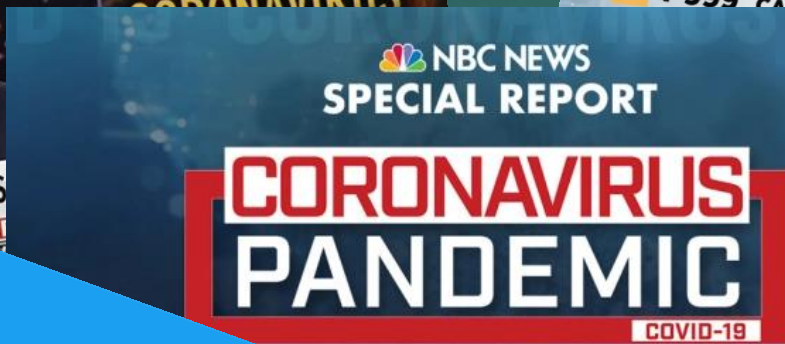
"It's no worse
than the
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"If I get exposed, I can
just take some (fill in
the blank) for it."

"I am antibody
positive, so I can do
whatever I want
to."

"There aren't that many
cases. Hospitals are
empty!"

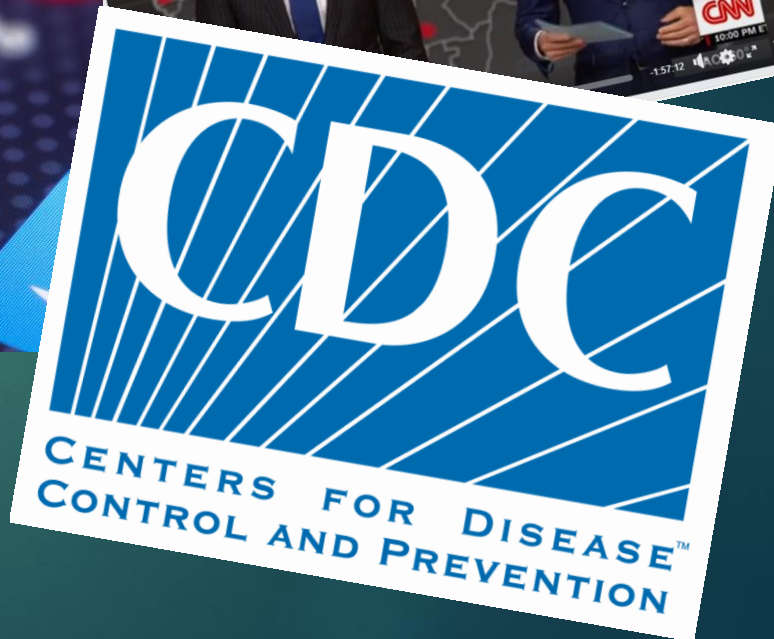


WEDNESDAY 10PM ET/PT

MSNBC NBC NEWS NOW



World Health
Organization



CENTERS FOR DISEASE™
CONTROL AND PREVENTION



**ONE
THING
AT A
TIME**

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“The Number of Deaths is Overblown”

- No... if “apples to apples” comparison
 - Annual flu death estimates are “calculated estimates”
 - More accurate would be weekly comparisons
 - Current daily COVID death rate is 1,000-2,000 cases/day
 - COVID issues
 - Early deaths / deaths without tests may not be counted
- Overall mortality estimate is 0.4-0.5%
 - Four to five times annual flu estimates
- Some groups at much higher risk



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The Goldilocks Dilemma



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Therapies for COVID-19

- An aside: Medical studies in the COVID-19 era
 - Prepublication issues – raging
 - Social media
 - 24-7-365 news cycle
- To date, no clear interventions are proven effective to prevent infection once exposed
- Treatments for infected and symptomatic patients are being studied; no clear evidence-based, patient-oriented outcome approaches yet

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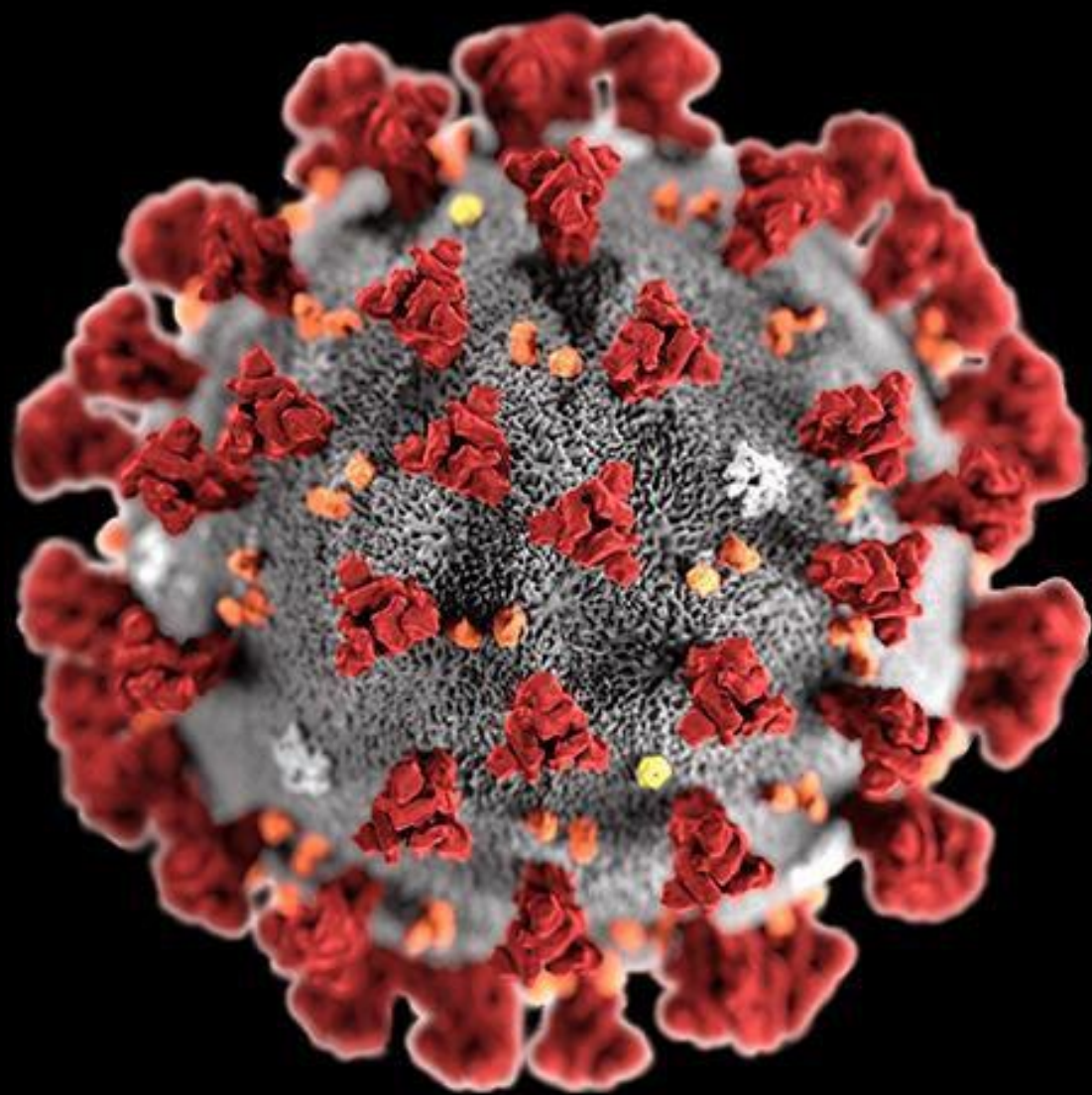
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A stone balancing sculpture is the central focus of the image. It consists of a vertical wooden post with a large, smooth, dark grey stone balanced on top. A horizontal wooden beam is balanced across the stone. On the left side of the beam, a smaller stone is balanced. On the right side, two more stones are balanced, one above the other. The background shows a beach with waves and a clear blue sky.

Minimize Economic Impact

Prevent Overwhelming
The Health Care System

Safe Back-to-Work and
Back-to-Life Practices

Minimize Preventable Deaths
Protect High Risk Individuals

Managing A Pandemic
Is A Delicate Balance

The Public Health / Daily Life Balance of COVID

- Each area looks through it's own lens at the problem
 - No single entity is completely “right”
- Goals
 - Minimize **preventable** deaths
 - Estimate / modulate the need for medical resources (hospital / intensive care)
 - Resume daily life as safely as possible

What Are The Goals of Public Health Strategies?

- Minimize mortality and morbidity
 - Effect on individuals
 - Effect on the health care system
- Track the infection
 - Case numbers
 - Case identification
 - Quarantine positive cases
 - Protect high risk groups

Explaining The Risks

- How likely am I to get COVID from someone else?
 - It's a matter of...**proximity, activity and time**
 - How much virus is in the air and how close you are to it
 - How long the virus is in the air
 - How long you are exposed to the virus
 - General principles
 - Outside is better than inside
 - Shorter exposure is better than longer
 - There are some activities that are higher risk

After choir practice with one symptomatic person, 87% of group developed COVID-19



● Index case

● 32 confirmed and 20 probable cases

● unaffected person

COVID-19 spreads easily

- Avoid groups
- Stay at least 6 feet apart
- Wear face coverings

CDC.GOV

SUPERSPREADER EVENTS

MMWR

- ▶ Funerals, birthdays, weddings
- ▶ Church services
- ▶ Educational meetings
- ▶ Large parties in enclosed spaces
- ▶ Meatpacking plants
- ▶ Warehouse workers (close)

What Is The Risk Of Getting the Virus?

- EXCELLENT blog explaining the risks in layman's terms
- Written by Dr. Erin Bromage
 - Comparative Immunology and Biology professor at Dartmouth
 - Useful to explain risks of acquiring coronavirus with examples

<https://www.erinbromage.com/post/the-risks-know-them-avoid-them>

Explaining The Risks

- What are the chances I'll get the virus if I have contact with someone with the virus?
 - Overall, it looks like ~1-5% of close contacts will get the virus
 - Protective measures decrease the risk
 - Highest risk?
 - At home if someone else has the virus (10-15% will get it)
- What is a close contact?
 - Within 3 feet for more than 15 minutes (somewhat arbitrary)

Explaining The Risks

- Can I get it from someone who is “pre-symptomatic”?
 - Yes, but less likely than if someone has symptoms
 - Evidence shows people may shed for up to **EIGHT DAYS** before symptoms develop

Priorities

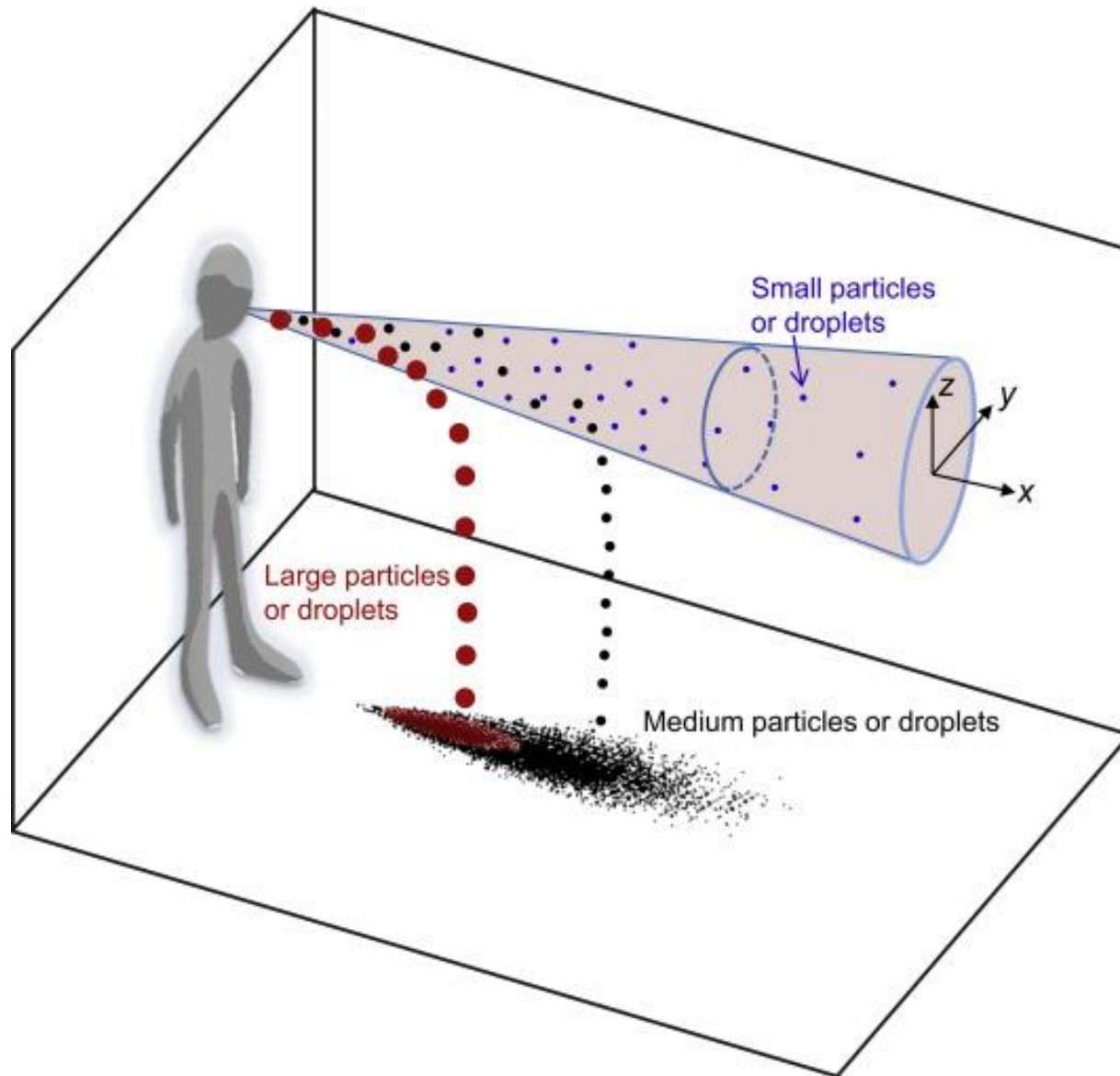
1. Good hand hygiene
2. No face touching
3. Cover coughs / sneezes
4. Maintain 6 feet distance
5. Wear a face mask
(correctly)
6. Assure others wear their
facemasks (correctly)

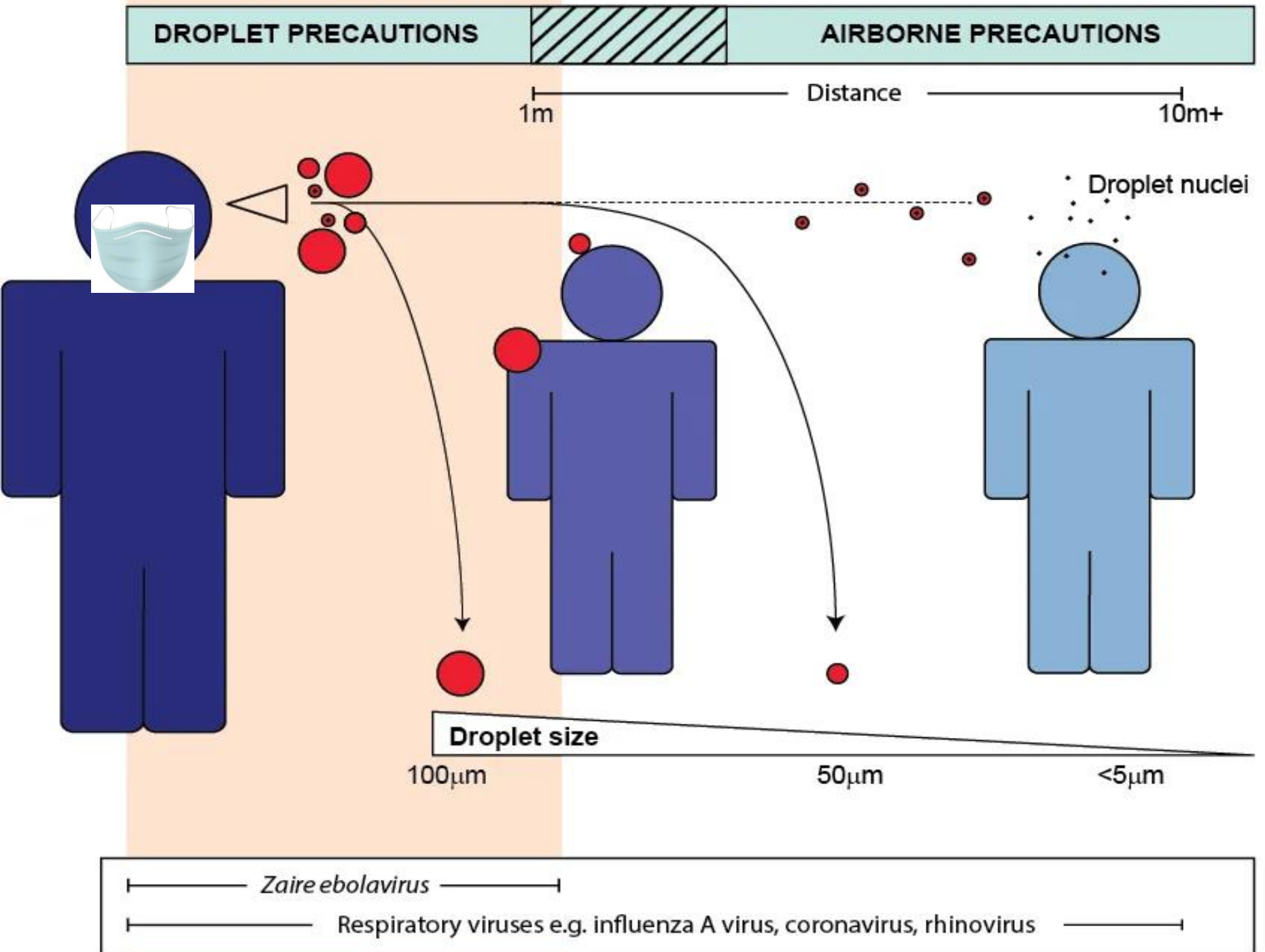


Ineffective Face Mask Bingo

@skidarstudios







**My
mask**



**Your
mask**



Masks prevent **droplet spread** – usual way COVID is transmitted
Surgical / cloth masks are fine for non-HCWs

A photograph of three surgeons in an operating room. They are wearing blue surgical gowns, blue bouffant hairnets, and white surgical masks. The surgeon in the center is a Black man, and the one on the left is a woman. They are both looking down at a patient on the operating table. A third surgeon is partially visible in the background on the right. The background shows typical operating room equipment and a sterile environment.

Would you want your surgery done by a surgeon who won't wear a mask?

A few more things...





- Food safety
 - Shopping safety practices
 - Minimize time in the store
 - Mask / sanitizing wipes / hand sanitizer
 - Six feet of distance



■ Handling food at home

- Wash food as per usual (e.g. vegetables)
- Consider wiping down containers with sanitizing wipes (likely not necessary)
- Wash hands after handling groceries

A few more things...

- Consider wiping down surfaces (countertops, door handles) once or twice a day
- Be thoughtful who you have enter your home
- If someone in your house gets sick, they need to isolate (CDC website re: what to do)



How do I keep
my family safe
if I work where I
get exposed to
SARS-CoV-2
while working?



I Can Be Exposed Because of My Work – How Do I Protect My Family?

- Work in a possible exposure area / keeping your family safe
 - Masks kept in garage if reused
 - Clothes taken off in garage – immediately into laundry
 - Keep a set of shoes for work outside – do not bring inside
 - Shower immediately after arriving home

FRONTLINE HEALTH CARE WORKERS: HOW TO KEEP COVID-19 OUT OF YOUR HOME

Recommendations from a group of EM physicians and nurses in the Bay Area

PREP: **CREATE AND MARK A HOT-ZONE**

near your home entrance



Using tape, mark off hot-zone (contaminated area) outside front door, inside garage, or inside and near the first entry point to your home. Place the following materials inside:

- A basket for clothes and loose items
- Hand sanitizer (at least 70% alcohol)
- Sanitizing wipes (if unavailable, use baby wipes and alcohol)
- Coat rack or hook for outerwear/coat

STEP 1: **DEROBE AND SANITIZE IN HOT-ZONE**

upon returning home each day



Stand in hot-zone.

Sanitize hands.

Carefully remove clothes to avoid contaminating surroundings.

Place jacket and bag on hook or rack, and hospital clothes into basket.

Remove shoes, and leave in hot-zone.

Disinfect phone, keys, and other loose items.*

Disinfect door knob and any other surface touched while entering.

STEP 2: **WASH CLOTHES AND SHOWER**

as soon as possible



Place clothes in washing machine or laundry bag designated for contaminated clothes. Wash clothes when appropriate for your context.

Wash hands with soap and water for 20 seconds.

Shower as soon as possible.

Put on clean clothes.

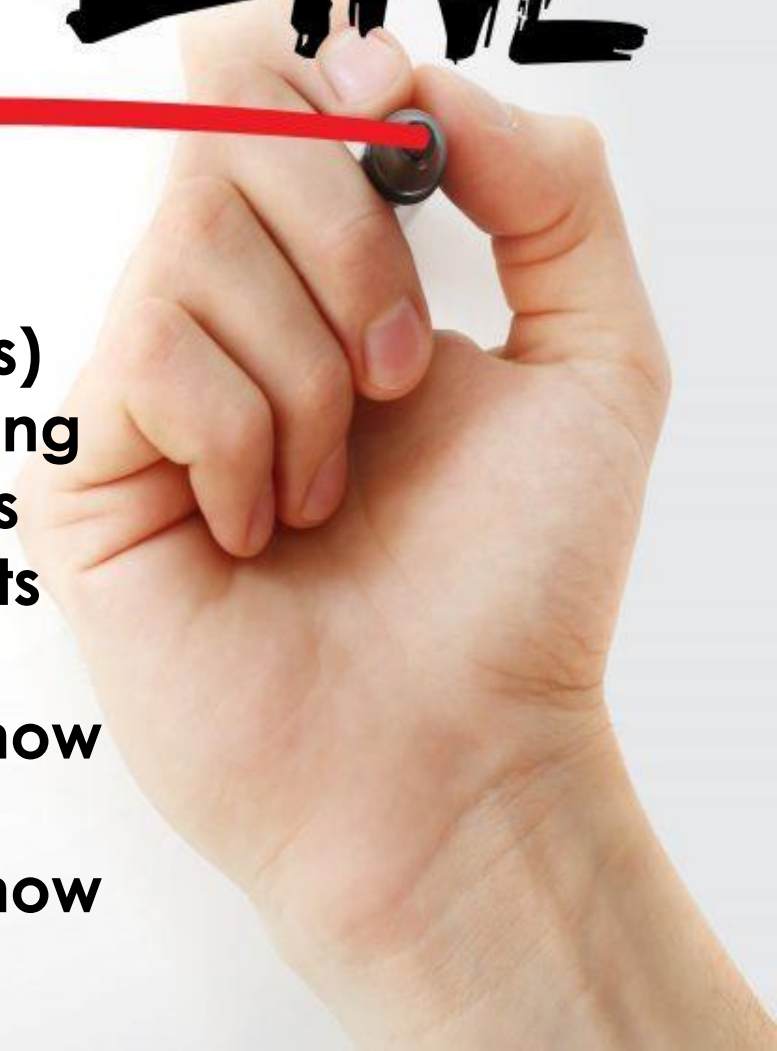
Please tailor these suggestions to your specific space and context.

*See support.apple.com/en-us/HT207123 for additional instructions for phones.

This document was produced by a group of San Francisco-based emergency physicians and designers. The recommendations are based on practices employed by this group of medical peers. With questions or feedback please contact Christian Rose (christianrosemd@gmail.com) or Nadia Roumani (nadia@dschool.stanford.edu). Designed by Anna Maria Irion & Thomas Both.

BOTTOM LINE

- Tell them:
 - How COVID is spread (droplets)
 - How to minimize the risk of being infected... and infecting others
 - What COVID antigen test results mean
 - What we do ... and don't ... know about antibodies
 - What we do ... and don't ... know about treatment





How Do You Reopen Your Practice
in the COVID Era?

Reopening Your Medical Office

- Be prepared... it's complicated
- Various guidelines available (AMA, specialty organizations, etc.) – consult them
- Your practice won't look the same as before any time soon... or maybe ever
- Open your practice incrementally

Reopening Your Medical Office

■ Goals

- Keep your patients and staff safe
- Assess your workspace / workflow to safely see patients
- Routinely screen staff / workers
- Plan for backlog of patients
- Anticipate and changes in patient expectations
- Add telemedicine as much as is appropriate

Reopening Your Medical Office

■ Musts

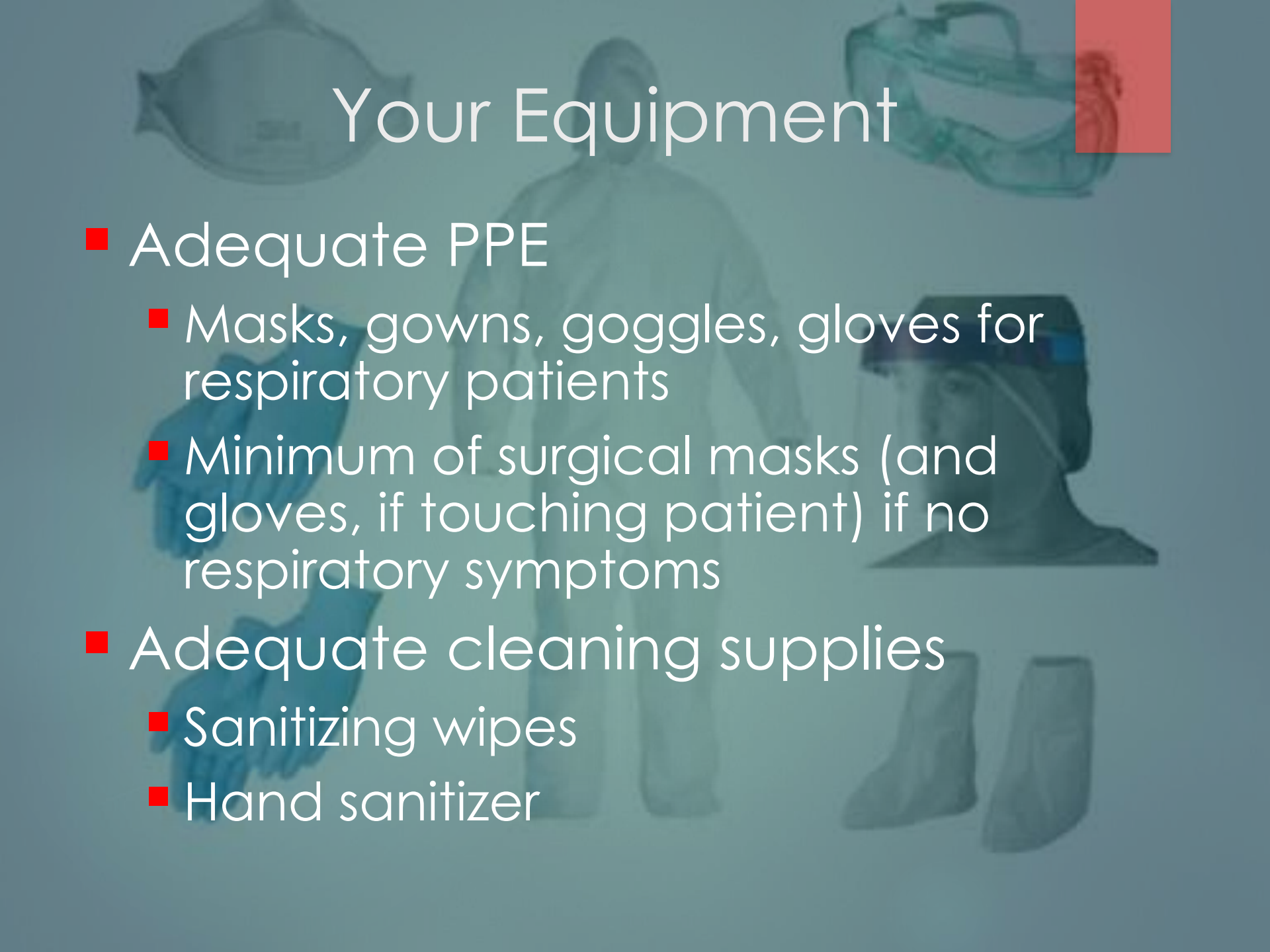
- Consult your malpractice carrier re: coverage, risks, suggestions
- Coordinate with other practices / clinics / hospitals
- Integrate telehealth
- Integrate pre-visit patient communication
- Assure adequate PPE available for staff and patients

Reopening Your Medical Office

■ Musts

- Assess office work areas for safe practices
- Determine best patient flow
- Implement plan to evaluate staff
 - Screening for infection
 - Plans if staff get sick or need to quarantine
- Assure sanitization practices in place (even after you leave for the day)

Your Equipment



- Adequate PPE
 - Masks, gowns, goggles, gloves for respiratory patients
 - Minimum of surgical masks (and gloves, if touching patient) if no respiratory symptoms
- Adequate cleaning supplies
 - Sanitizing wipes
 - Hand sanitizer

AAFP Office Preparedness

- PPE / sanitizing needs
 - Hand sanitizer *
 - Sanitizing wipes
 - Surgical masks ** (pt - not coughing or aerosolizing)
 - N95 masks ** (pt - coughing or aerosolizing)
 - Gowns **
 - Goggles / face masks **
 - Gloves
- * liberally placed around office / patient care areas
- ** For patients with respiratory symptoms

You Office Staff

- Plan for daily staff health screen (symptom/exposure list *, temperature)
- Keep records of this SEPARATE from personnel records
- Teach appropriate use of PPE
- Assure workspaces have appropriate degree of separation
- Have backup plan if someone can't work



Your Staff: Return to Work

CDC April 30, 2020

- Healthcare Workers – Symptom Based Strategy
 - Exposed, asymptomatic? Can still work
 - Symptomatic; or symptomatic and positive?
 - “At least 3 days (72 hours) have passed since recovery – defined as resolution of fever without the use of fever-reducing medications and improvement of respiratory symptoms (cough, shortness of breath); and, **at least 10 days** have passed since symptoms first appeared” (JAMA article – check CDC website)

Your Office Space

- Dedicated spaces in waiting room / dedicated room for respiratory patients
- Assure appropriate cleaning after patients leave rooms
- Higher concern for cleaning in patients with respiratory symptoms
- Minimize staff in close proximity; consider if staff can work from home



Your Patient Flow

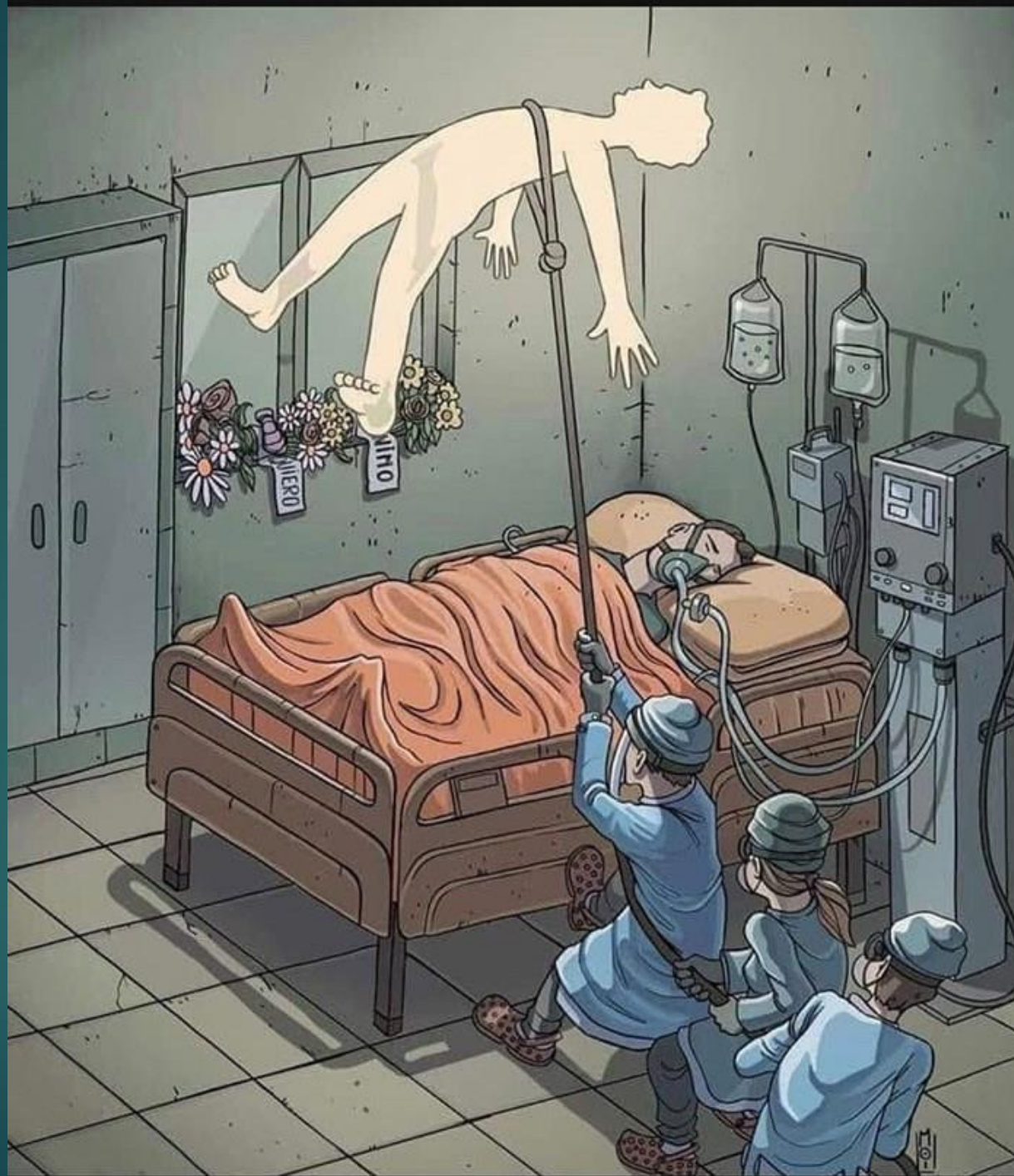
- Integrate telehealth as much as possible
- Prescreen patients before visit (call, telehealth – use script like one supplied by AMA)
- Minimize accompanying persons
- Keep time in waiting room to minimum
 - Have patient wait in car, call when ready?
- Assure no overcrowding in waiting room
- Keep direct contact time to a minimum
- Clean rooms appropriately after visits

Building The
Plane While
Flying It



☒ Problem

☒ Opportunity



Thank You & Be Safe
