Tackling the COVID-19 Pandemic – Year One

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No conflicts of interest

Themes and Goals

- Describe and develop action plans for
  - Helping under-resourced hot spots
  - Addressing effects of the pandemic on mental health of frontline providers
  - Equitable distribution of the COVID-19 vaccine

Tackling Another COVID-19 Pandemic Disparity: Distance from Major Academic Medical Centers Encumbers Emergency and Critical Care Physician Surge Capacity

Academic Emergency Medicine
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Texas
Santa Fe
Amarillo
Oklahoma City
Little Rock
Jackson
Lubbock
Wichita Falls
Fort Worth
Dallas
Arlington
Abilene
Tyler
Midland
Odessa
San Angelo
El Paso
Waco
Temple
Beaumont
Baton Rouge
Austin
Houston
Galveston
San Antonio
Corpus Christi
Laredo
Brownsville
Gulf of Mexico
NEW MEXICO
TEXAS
MEXICO
KANSAS
OKLAHOMA
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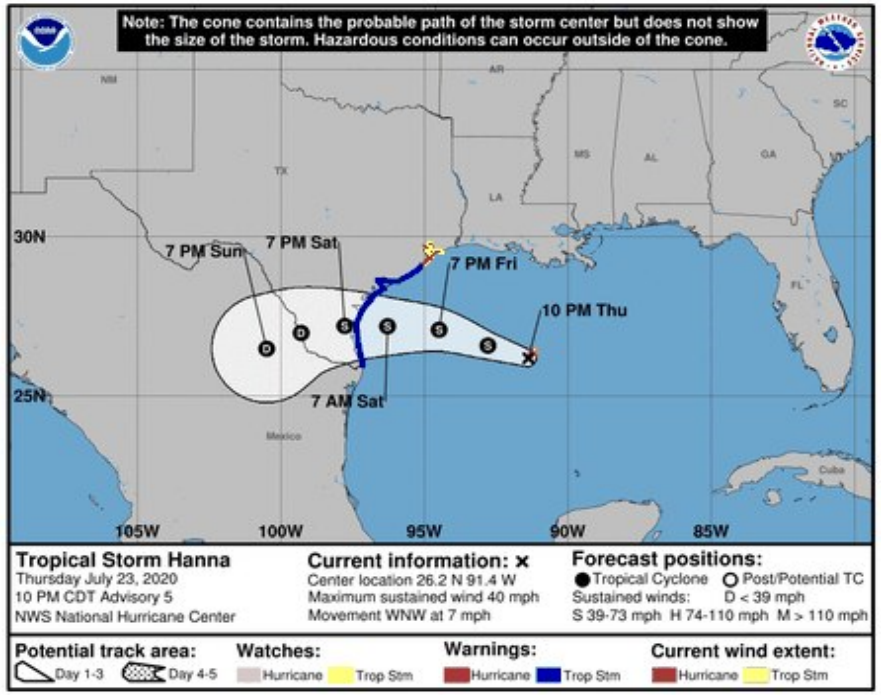
Main Entrance


Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.
7 PM Sun
7 PM Sat
7 PM Fri
10 PM Thu
7 AM Sat
30N
25N
105W
100W
95W
90W
85W
Tropical Storm Hanna
Thursday July 23, 2020
10 PM CDT Advisory 5
NWS National Hurricane Center
Current information:
Center location 26.2 N 91.4 W
Maximum sustained wind 40 mph
Movement WNW at 7 mph
Forecast positions:
Tropical Cyclone
Post/Potential TC
Sustained winds:
D < 39 mph
S 39-73 mph
H 74-110 mph
M > 110 mph
Potential track area:
Day 1-3
Day 4-5
Watches:
Hurricane
Trop Stm
Warnings:
Hurricane
Trop Stm
Current wind extent:
Hurricane
Trop Stm

Brownsville (Cameron County)

- Population 406,220
- 88% Latinx
- **Income $9,762**
- COVID-19 deaths 629 (Aug 2020)

San Francisco

- Population 881,549
- 33% Asian, 15% Latinx, 6% African American
- **Income $139,405**
- COVID-19 deaths 72 (Aug 2020)

Distance from Academic Medical Centers

Hospitals 4

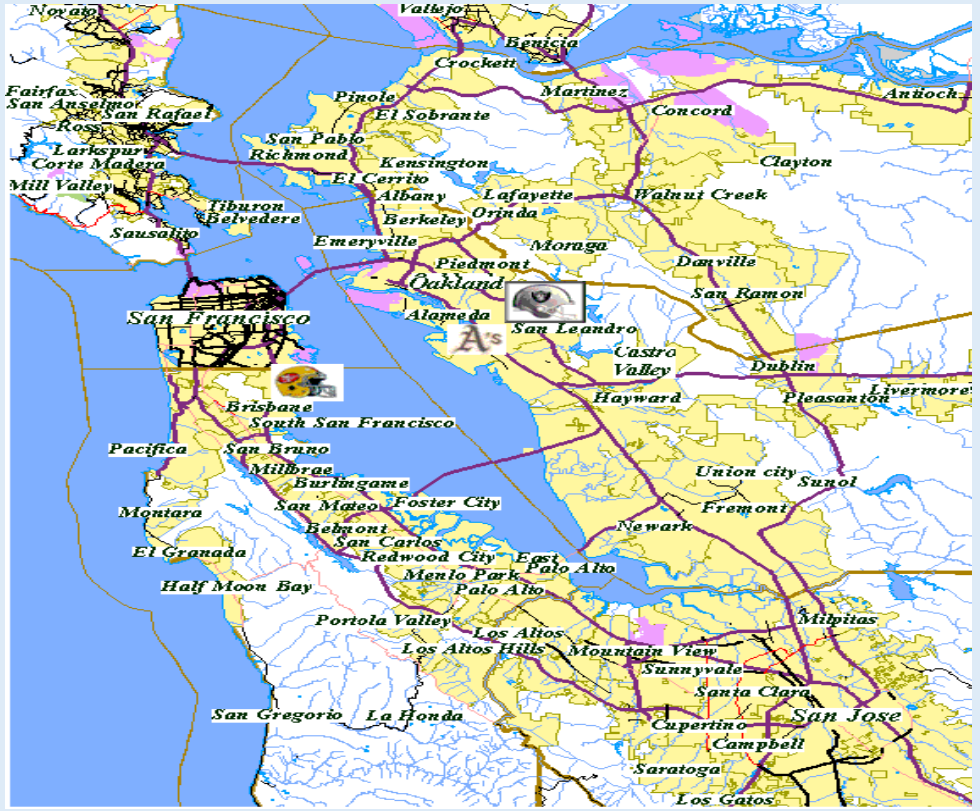
Hospitals with residencies 1

Intensivists 6

Hospitals 16

Hospitals w residencies 10

Intensivists – at least 200



Disparities on the Ground (ICU)

Brownsville

- 150-180 COVID patients
- 50-60 ICU COVID patients
- 2 Intensivists (each operating solo)
- Limited consultations (neuro, cardiology, nephrology)

Bay Area

- 20-30 total COVID patients
- 3-5 ICU COVID patients
- ICU team of 5 – 7 physicians
- Unlimited consultations

Shortages Out of Critical Care Resources --- Substitutions

- ICU beds --- makeshift ICUs in PACU, wards
- Ventilators --- transport ventilators
- Midazolam --- valium
- Fentanyl --- morphine
- Vecuronium/cisatracurium --- rocuronium
- Dexamethasone --- methylprednisolone
- Limited Remdesivir
- No ECMO

Disparities lead to greater COVID-19 mortality

- Not just greater # of cases
- Higher case-fatality rates (4-fold as compared to SF)

- **IT'S NOT THEIR FAULT**
  - More diligent about masks (*cubrebocas*)
  - Not throwing wild parties

Addressing Surge Capacity Disparities (now and future pandemics)

- Narrow 3-week window
- Current FEMA system plods too slowly and can’t get to all of these
- Regional and nimble

RApid Medical Provider Activation Response Teams (RAMPART)

- Strike forces of physicians, nurses and respiratory therapists to quickly mobilize to support under-resourced hotspots.
- Plot and color code (green, yellow, orange, red) under-resourced areas
- Establish regional registries
- Supply bundles
- Waivers for credentialing and malpractice

Effects of the COVID-19 Pandemic on Frontline Providers

Two Studies involving ED Providers

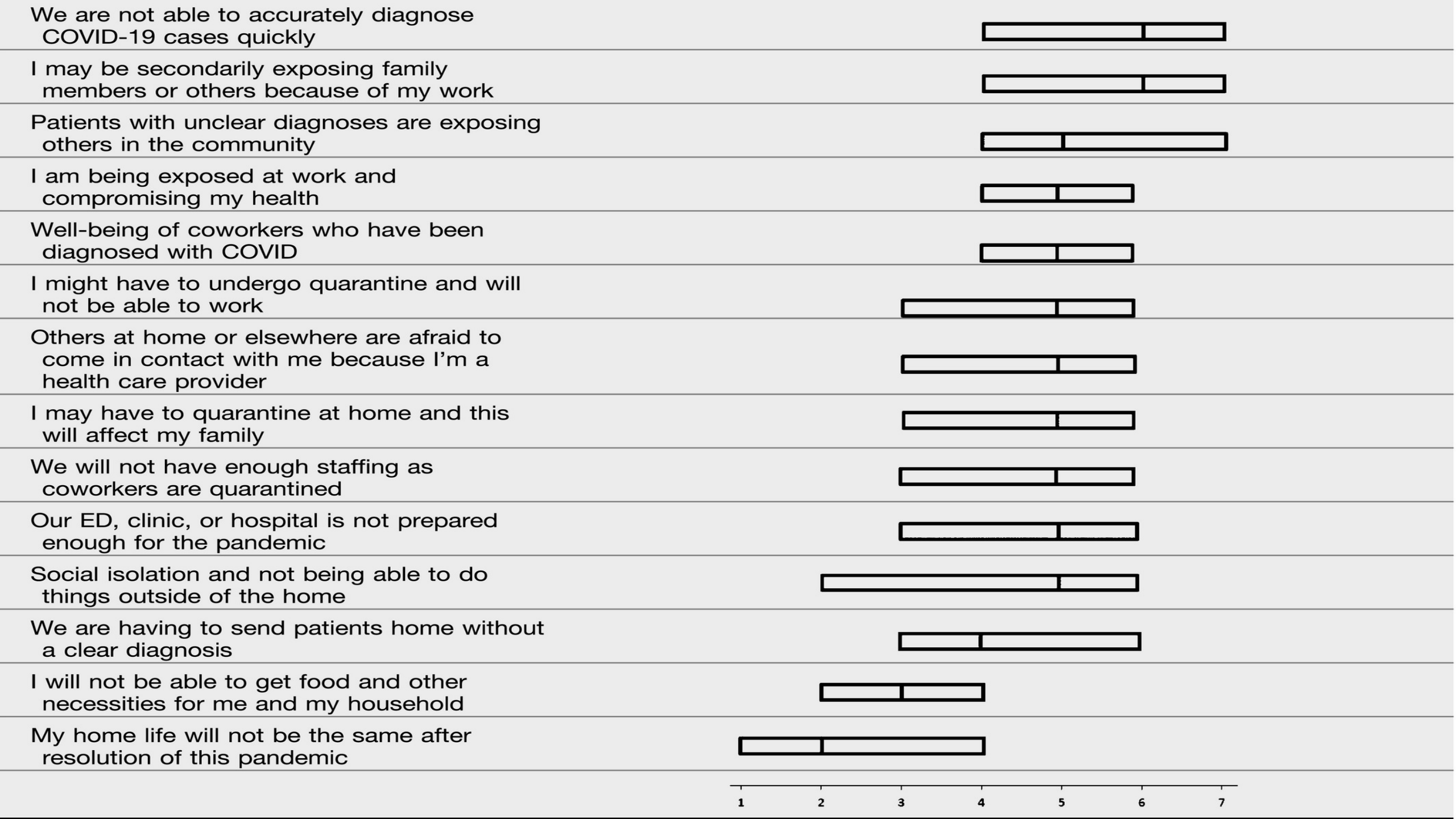
- Academic Emergency Medicine Physicians' Anxiety Levels, Stressors and Potential Stress Mitigation Measures during the Acceleration Phase of the COVID-19 – *Academic Emergency Medicine*
- COVID-19-Related Stress Symptoms Among Emergency Department Personnel – *Annals of Emergency Medicine*

Academic Emergency Medicine Physicians

- 426 EM physicians at 7 EDs – UC sites, Cooper (Camden, NJ) and LSU (New Orleans)
- April to early May 2020
- Cross-sectional survey via email
- Outcomes
  - COVID-19 induced stress/anxiety
  - Particular stressors
  - Mitigation measures to relieve this stress

Stress/Anxiety

- Moderate to severe increases in stress and anxiety at work
- Increased emotional exhaustion and burnout
- Moderate to severe stress at home with marked changes in home life
  - 77% decreased affection (hugging, kissing) family
  - Strip and shower
  - Staying away (hotel or other) from family
  - Family and friends treat them differently – fear of close contact


We are not able to accurately diagnose COVID-19 cases quickly
I may be secondarily exposing family members or others because of my work
Patients with unclear diagnoses are exposing others in the community
I am being exposed at work and compromising my health
Well-being of coworkers who have been diagnosed with COVID
I might have to undergo quarantine and will not be able to work
Others at home or elsewhere are afraid to come in contact with me because I'm a health care provider
I may have to quarantine at home and this will affect my family
We will not have enough staffing as coworkers are quarantined
Our ED, clinic, or hospital is not prepared enough for the pandemic
Social isolation and not being able to do things outside of the home
We are having to send patients home without a clear diagnosis
I will not be able to get food and other necessities for me and my household
My home life will not be the same after resolution of this pandemic
1
2
3
4
5
6
7

Mitigation Measures

- Increased PPE
- Rapid turnaround testing for COVID-19 in the ED
- Testing at EM provider discretion
- Better communication about protocols
- Assurance that can take leave if get sick
- Greater clarity about provider exposure

Emergency Department Personnel Study

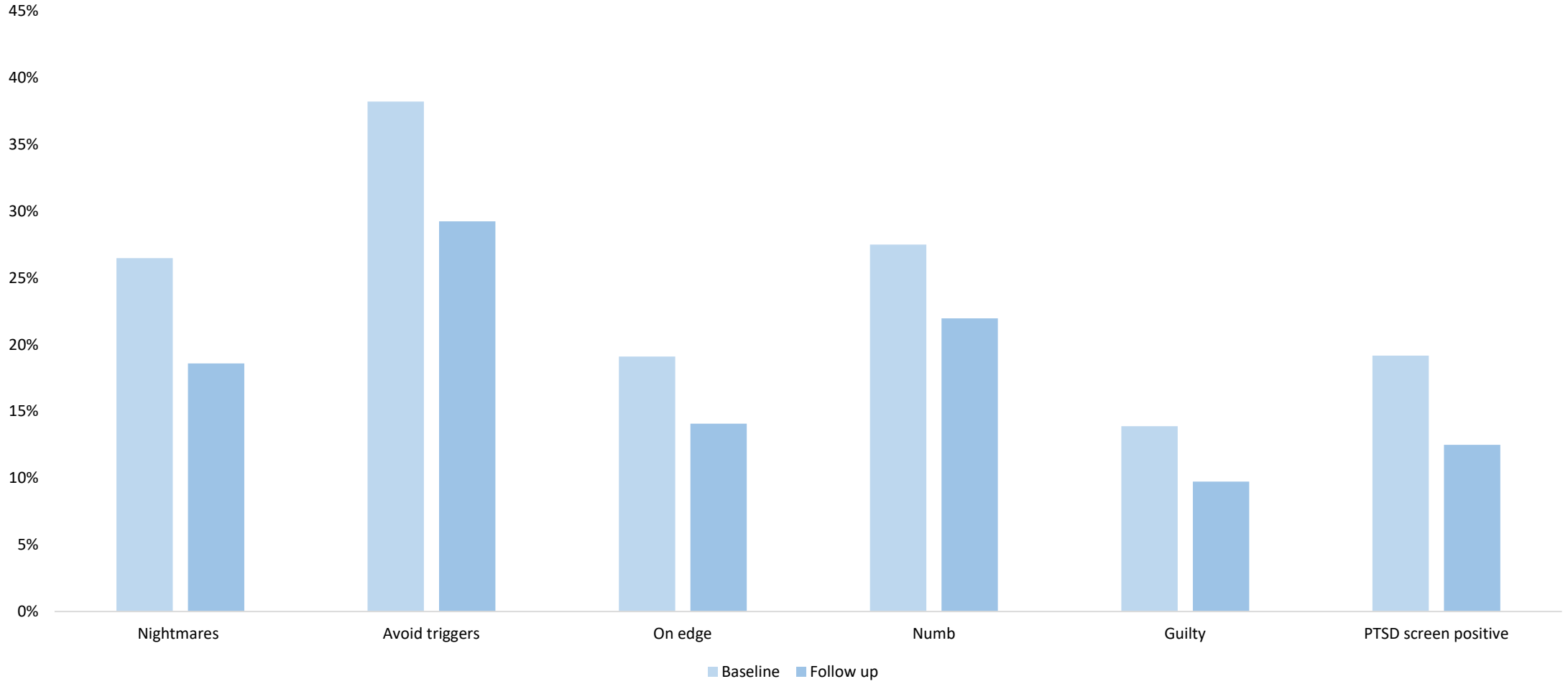
- CDC sponsored COVERED study
- 20 geographically representative EDs
- 1600 MDs, RNs, and other non-clinical staff
- May to November 2020
- Outcomes
  - Stress/Anxiety
  - Risk for PTSD
  - Stress mitigation effect of COVID-19 testing of ED staff

Findings COVERED Study

- Moderate to severe anxiety across the board
  - 64% MDs, 68% RNs, 61% non-clinical staff
  - Surge sites approximately same
- Approximately half moderate to severe emotionally exhaustion and burnout
  - Female gender higher levels
- Serologic (antibody) testing associated with decreased stress and burnout levels
  - Greatest relief in those who tested positive for antibodies

Nearly 1/5 at Risk for PTSD

Figure 2. Emergency Department Personnel Responses to Posttraumatic Stress Disorder Screening Instrument, United States, May-July 2020



Summary Stress Mitigation Measures for Frontline Providers

- PPE
- Testing of health care providers – make it easy
- Increased rapid testing of ED patients
- Mental health resilience consultation
- Assure that they can take leave

- **Ultimate mitigation measure – COVID-19 vaccines**

COVID-19 Vaccination Barriers

- Supply/production
- Delivery/administration
  - Health Care Access – places to get vaccines
- Vaccine Hesitancy

EDs – the Safety Net of the Safety Net

- Vulnerable populations ONLY health care access is through EDs
  - Homeless persons
  - Immigrants
  - Uninsured
- African Americans and Latinx disproportionate amounts of care in EDs
  - These groups have suffered 2-fold morbidity and mortality from COVID-19

ED-based COVID-19 Vaccinations

Basic principle of public health: ***You must go where they go***

- Efforts toward equitable distribution of the COVID-19 vaccine, vaccination-based herd immunity, and prevention of disease in high-risk, vulnerable populations must go where these vulnerable populations go for care – the ED
- **Develop ED-based COVID-19 vaccination programs**

The Rapid Evaluation of COVID-19 Vaccination in Emergency Departments for Underserved Patients study - REVVED UP

- 15 EDs across the US
- Surveys during real-time patient visits to EDs
- Mask wearing practice
- Health care access
- COVID-19 vaccine acceptance (converse of hesitancy)
- Where could they get vaccines?

Preliminary (1/2) REVVED UP Findings

- 30% of respondents primary (and often only) health care in ED
- ED Usual Source of CARE patients
  - 66% African American and Latinx
  - 44% vaccine hesitant
  - 67% of vaccine acceptors have no place to go for vax
  - 94% of vaccine acceptors would accept it in the ED

ACEP ED Survey

- Survey of ED Medical Directors in 40 states
- 19% currently provide influenza vaccines
- 63% would be willing to participate in ED-based COVID-19 vax program
- 25% want more information

https://www.acep.org/corona/COVID-19-alert/covid-19-articles/ed-medical-directors-share-covid-19-needs-in-survey/

Vaccine Hesitancy

- Multiple online and phone studies: hesitancy rates 28-40%
- Sampling skewed away from vulnerable populations
- African Americans and Latinx more hesitant
  - Same as with influenza vaccines
- Main concerns
  - Side effects
  - Don’t want to be the first
  - Distrust of healthcare systems

Address ED Usual Source of Care Patient Barriers to COVID-19 Vaccination

- Vaccine hesitancy
  - Assure safety
  - Be a trusted messenger
- Healthcare access barrier
  - Tell them where they can go to get vaccine
- Immigrants
  - Assure them that they are safe from discovery and deportation