Tackling The COVID-19 Pandemic – Year One of a Frontline Provider and National Advisor

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Conflict of interest statement:

1) Served on the Biden/Harris COVID-19 National Advisory Board
2) Recent grant from funding from the National Institutes of Allergy and Infectious Diseases

Themes and Goals

- Describe experiences over the past year (3 stages)
- Describe 3 major issues: research and action plans
  - Addressing effects of the pandemic on mental health of frontline providers
  - Helping under-resourced hot spots
  - Equitable distribution of the COVID-19 vaccine

Emergency Departments are the Frontline

- Inherently chaotic at times

- Critically ill patients brought in with little information

Along with ICUs, EDs and their staff disproportionately affected by COVID

Phase 1: February through May

1) Shortages of PPE
2) Very limited testing
3) No treatments other than support
4) Overwhelming the system
5) Deaths in ED personnel
6) Unknown transmissibility

ALL LED TO DEEP EFFECTS ON FRONTLINE PROVIDERS

Effects of Pandemic on Frontline Providers: Two Studies involving ED Providers

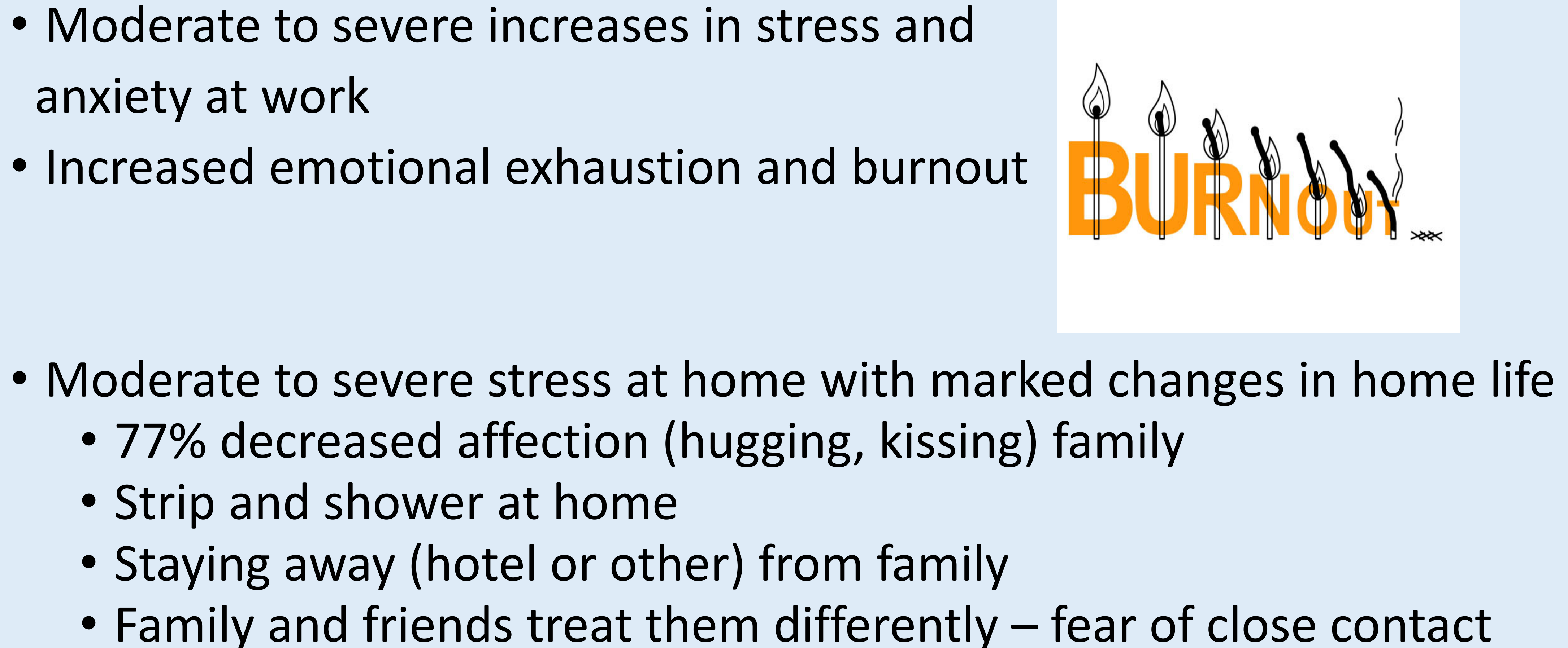
- Academic Emergency Medicine Physicians' Anxiety Levels, Stressors and Potential Stress Mitigation Measures during the Acceleration Phase of the COVID-19 – *Academic Emergency Medicine*
- COVID-19-Related Stress Symptoms Among Emergency Department Personnel – *Annals of Emergency Medicine*

Emergency Medicine Physicians

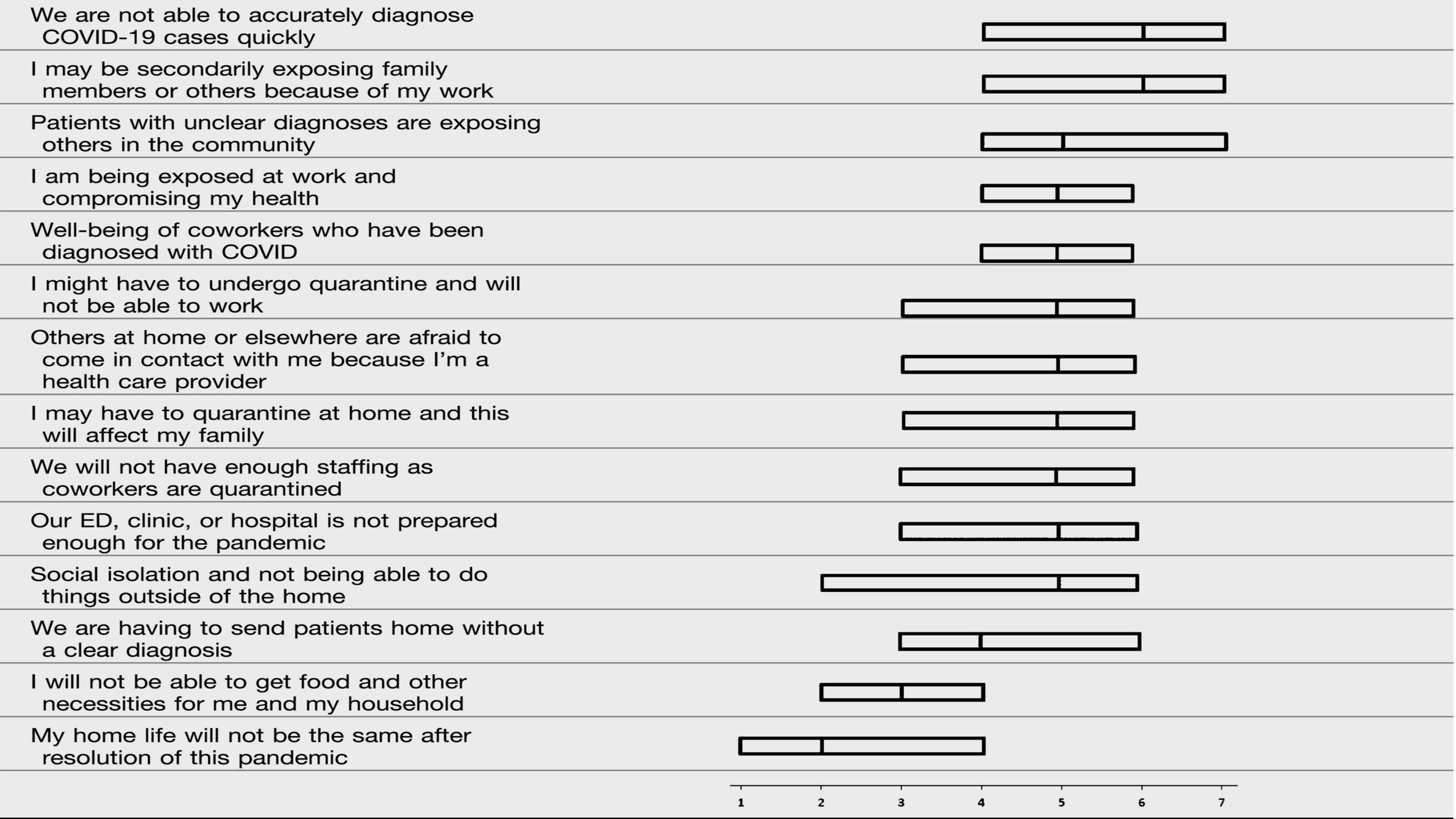
- 426 EM physicians at 7 EDs – UC sites, Cooper (Camden, NJ) and LSU (New Orleans)
- April to early May 2020
- Cross-sectional survey via email
- Outcomes
  - COVID-19 induced stress/anxiety
  - Particular stressors
  - Mitigation measures to relieve this stress

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 at home
  - 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

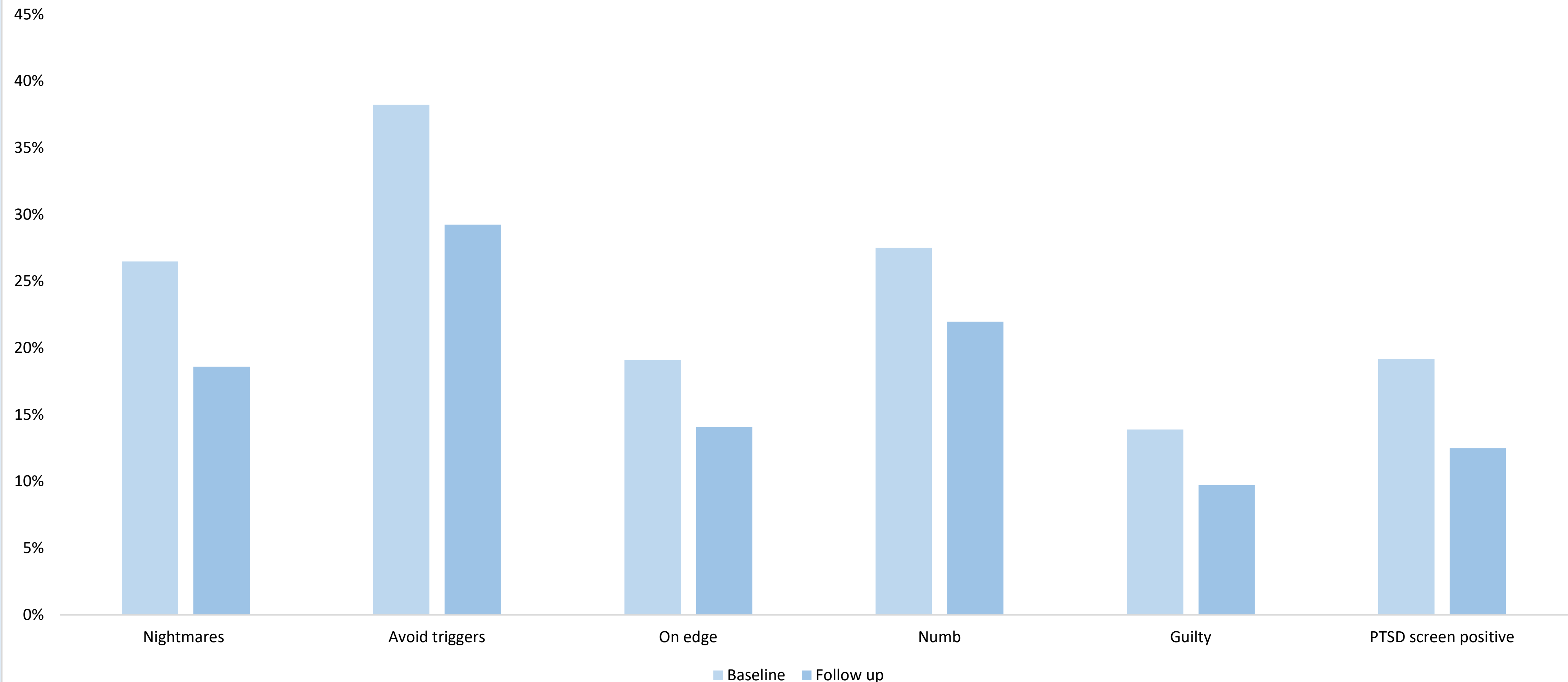
Emergency Department Personnel Study

- 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



Summary Stress Mitigation Measures for Frontline Providers

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

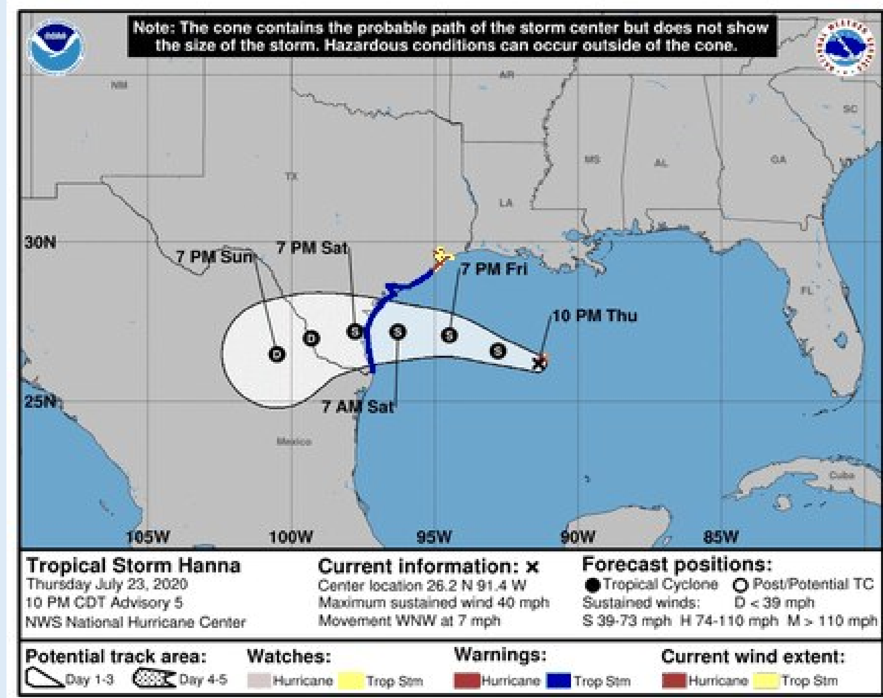
- **Ultimate mitigation measure – COVID-19 vaccines**

Phase 2: June to October 2020

- 2 treatments: Dexamethasone and Remdesivir
- Ventilation strategies: high-flow oxygen and proning
- Improved PPE
- Improving diagnostic testing
- **Surges and overwhelming of hospitals – Brownsville, TX**

Texas
N
C O
K A N S A S
M O
37°
O K
Oklahoma City
A R
Little Rock
T N
M S
Jackson
Santa Fe
N E W M E X I C O
Amarillo
Lubbock
Wichita Falls
Fort Worth
Dallas
Arlington
Tyler
Abilene
Midland
Odessa
San Angelo
T E X A S
Waco
Temple
El Paso
L A
Baton Rouge
Beaumont
Austin
Houston
Galveston
San Antonio
M E X I C O
Gulf of Mexico
Corpus Christi
Laredo
Brownsville
0 50 100 mi
0 50 100 km
26°
©1999 maps.com
106°
100°
94°

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.
30N
25N
7 PM Sun
7 PM Sat
7 PM Fri
10 PM Thu
7 AM Sat
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**

San Francisco

- Population 881,549
- 33% Asian, 15% Latinx, 6% African American
- **Income $139,405**

Distance from Academic Medical Centers

Hospitals 4

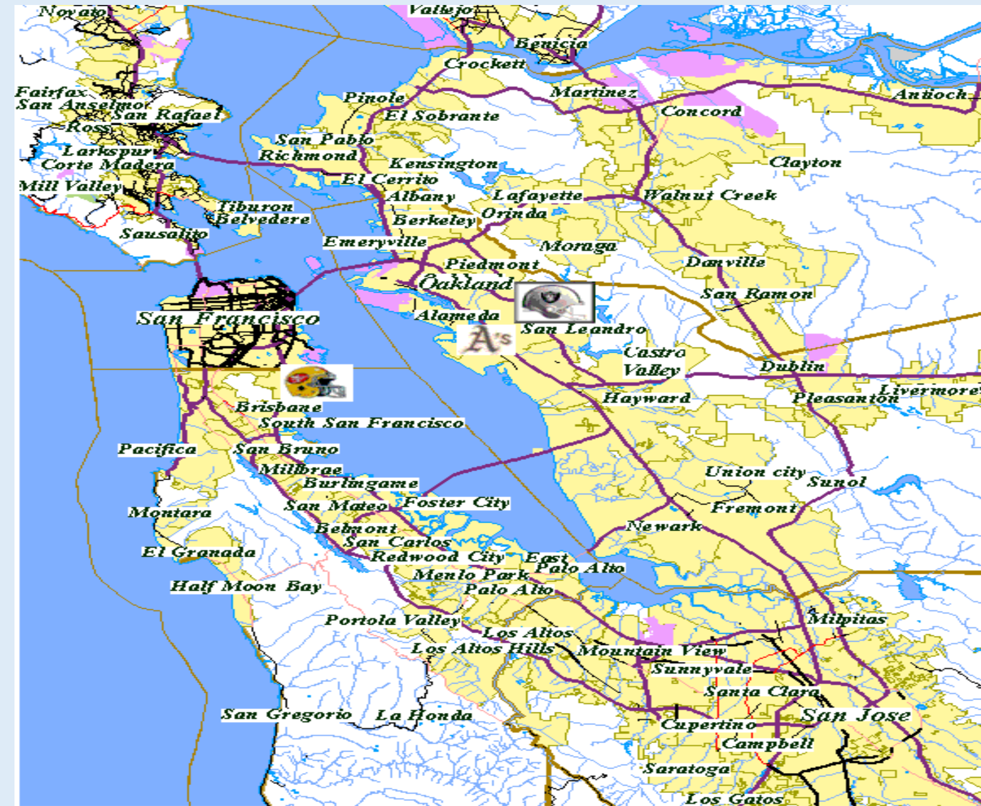
Hospitals with residencies 1

Intensivists 6

Hospitals 16

Hospitals w residencies 10

Intensivists – at least 200



Disparities on the Ground (ICU)

Brownsville hospital

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

Bay Area hospital

- 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)
- **Cameron County COVID-19 deaths 629 vs 72 in SF (Aug 2020)**

IT’S NOT THEIR FAULT

- More diligent about masks (*cubrebocas*)
- Not throwing wild parties
- Respect health care and health care workers

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

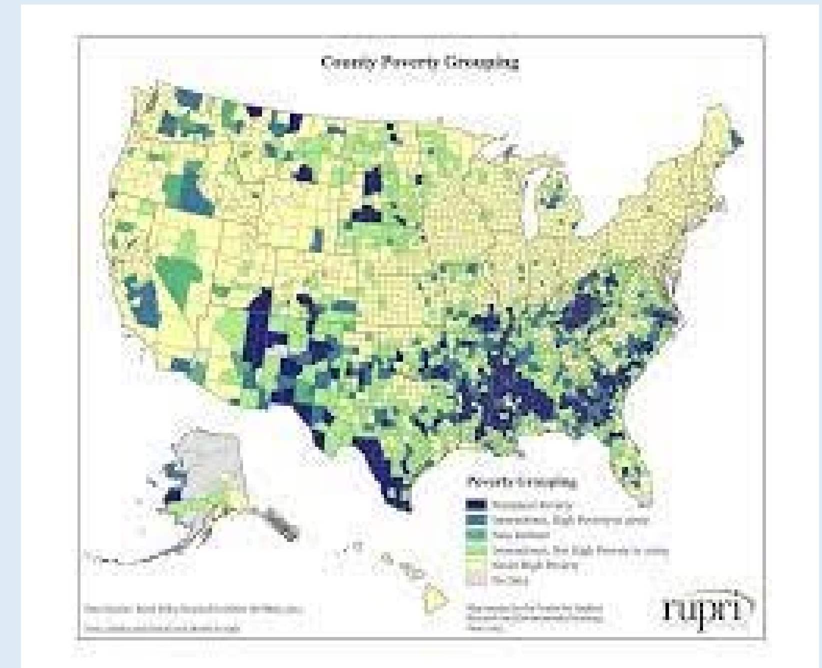
Academic Emergency Medicine
https://doi.org/10.1111/acem.14123

Addressing Surge Capacity and Community 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



Phase 3: November to Now - HOPE

- Change in Leadership – Taking the Pandemic Seriously
- The Biden/Harris Advisory Board
- Better testing
- Better treatment regimens
- More organized response
- Vaccine

Remaining Issues: COVID-19 Vaccination Barriers

- Supply/production - better
- Delivery/administration – much better
- **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**

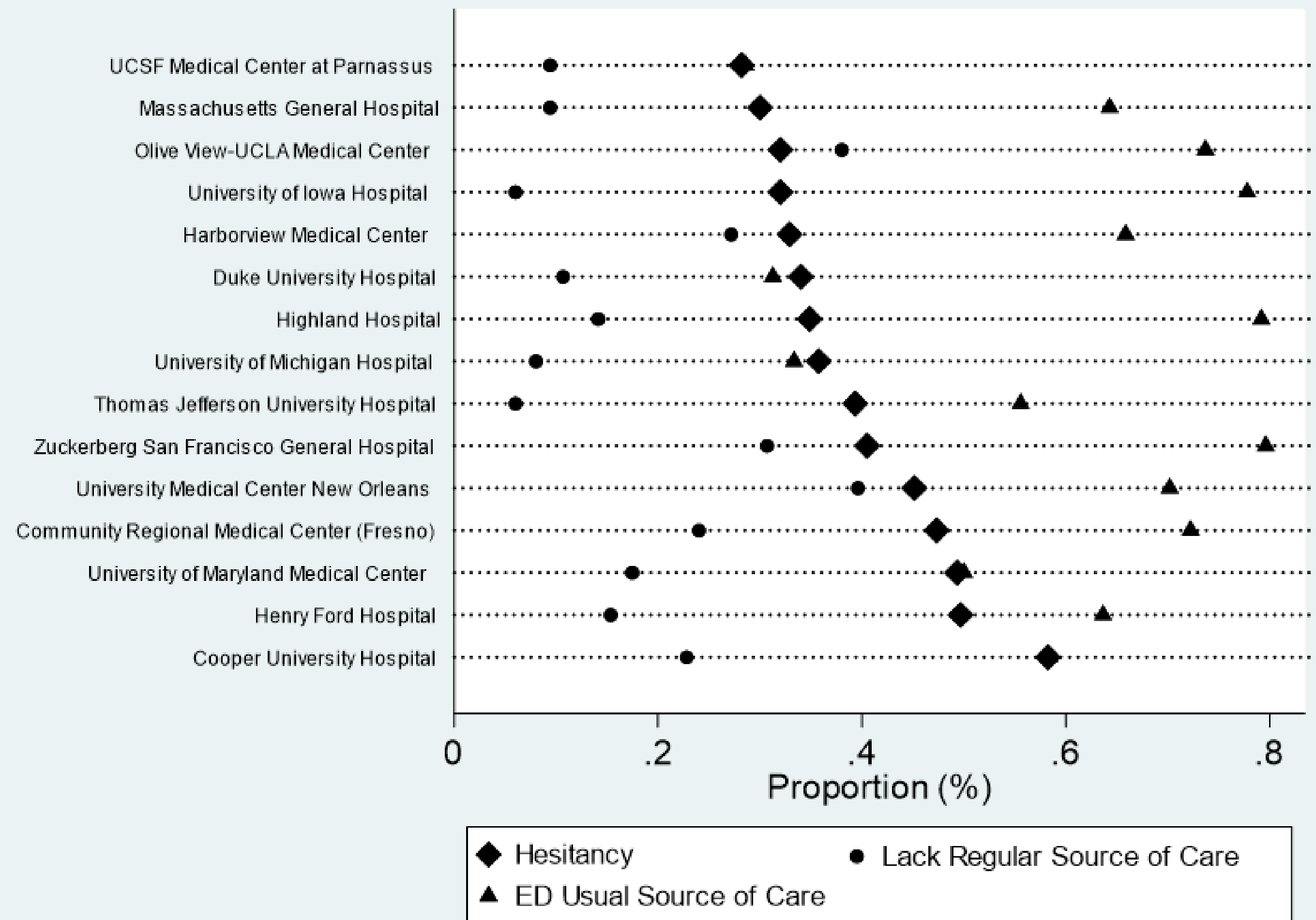
The Rapid Evaluation of COVID-19 Vaccination in Emergency Departments for Underserved Patients study - REVVED UP

- 2301 ED patients
- 15 EDs across the US
- Surveys during real-time patient visits to EDs
- Mask wearing practice
- Health care access
- COVID-19 vaccine hesitancy
- Where could they get vaccines?

REVVED UP Findings

- 20% 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**

Individual Site Findings



Vaccine Hesitancy Reasons

1) Side effects
2) Don’t believe they work
3) Don’t want to be the first
4) Distrust of healthcare systems
5) Concerns of discovery

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

ED Delivery of COVID Vaccines

- Many are giving COVID vaccines (leftover supplies)
- ACEP 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

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

Summer 2021 and On

- NIAID Grant to address COVID (and other vaccine hesitancy) through the ED
- Working with a team of others to review the COVID-19 pandemic: A COVID Commission
- Push to treat COVID-19 as a global issue: many countries are where we are