

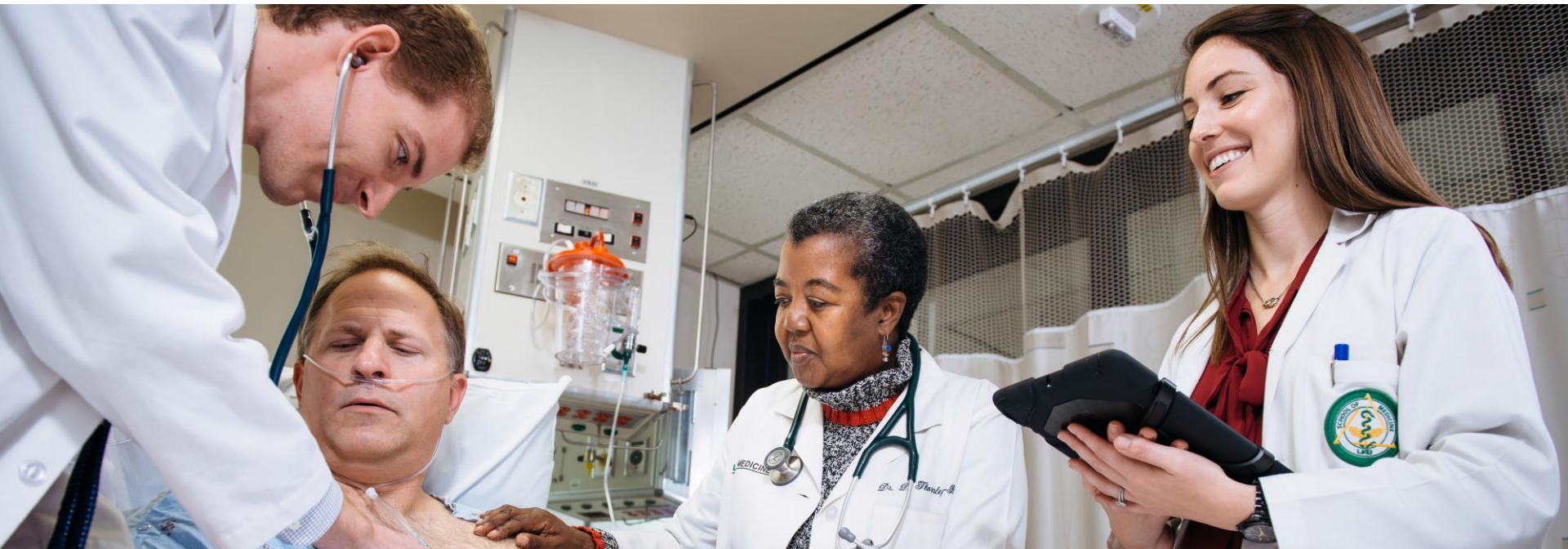


**SOCIETY OF  
BEDSIDE MEDICINE**

# **SBM@theBedside** During Covid-19 (*July 2020*)

## **Welcome**

*Stephen W. Russell, M.D., University of Alabama at Birmingham (UAB)*



Institutional Founding Members



# Founding & Institutional Members

Institutional Members





## **Society of Bedside Medicine + Covid-19**

Fostering best-practices of physician-patient interactions and new knowledge of clinical skills during Covid-19

### **CME Credit**

In Partnership with the Presence Center and the Program in  
Bedside Medicine/Stanford Medicine 25, Stanford University,  
School of Medicine

To claim CME, please await instructions via email after conclusion  
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## Agenda

- **Noon:** *Welcome, Questions & Answers* (Stephen W. Russell, MD, UAB)
- **12:04-12:16:** *Practical Pearls: Cleaning POCUS Equipment* (John Kugler, MD, Stanford University)
- **12:16-12:28:** *Covid-19 and Mental Health* (Joshua Morganstein, MD, Captain US Public Health Service, Uniformed Services University)
- **12:28-12:40:** *Covid-19 and the Cardiology Consultant* (Dr. Junaid Zaman, Royal Brompton Hospital and Imperial College, London)
- **12:40-12:52:** *Covid & Intimate Partner Violence at the VA* (Dr. Fernanda Rossi, Palo Alto VA)
- **12:52-12:57:** *Hidden & Here During Covid-19: Witness*, Dr. Megha Shankhar, Stanford University)
- **12:57-1:00 pm:** *Closing* (Sonoo Thadaney Israni, MBA, Stanford University)





For more information  
email [info@bedsidemedicine.org](mailto:info@bedsidemedicine.org)  
or visit [www.besidemedicine.org](http://www.besidemedicine.org)

# Caregiver Wellbeing and Sustainment During COVID-19

**Joshua Morganstein, M.D.**

**Captain, U.S. Public Health Service**

**Associate Professor / Assistant Chair, Department of Psychiatry**

**Assistant Director, Center for the Study of Traumatic Stress**

**School of Medicine, Uniformed Services University**

**[www.cstsonline.org](http://www.cstsonline.org)**

**CSTS**



# Disclaimer

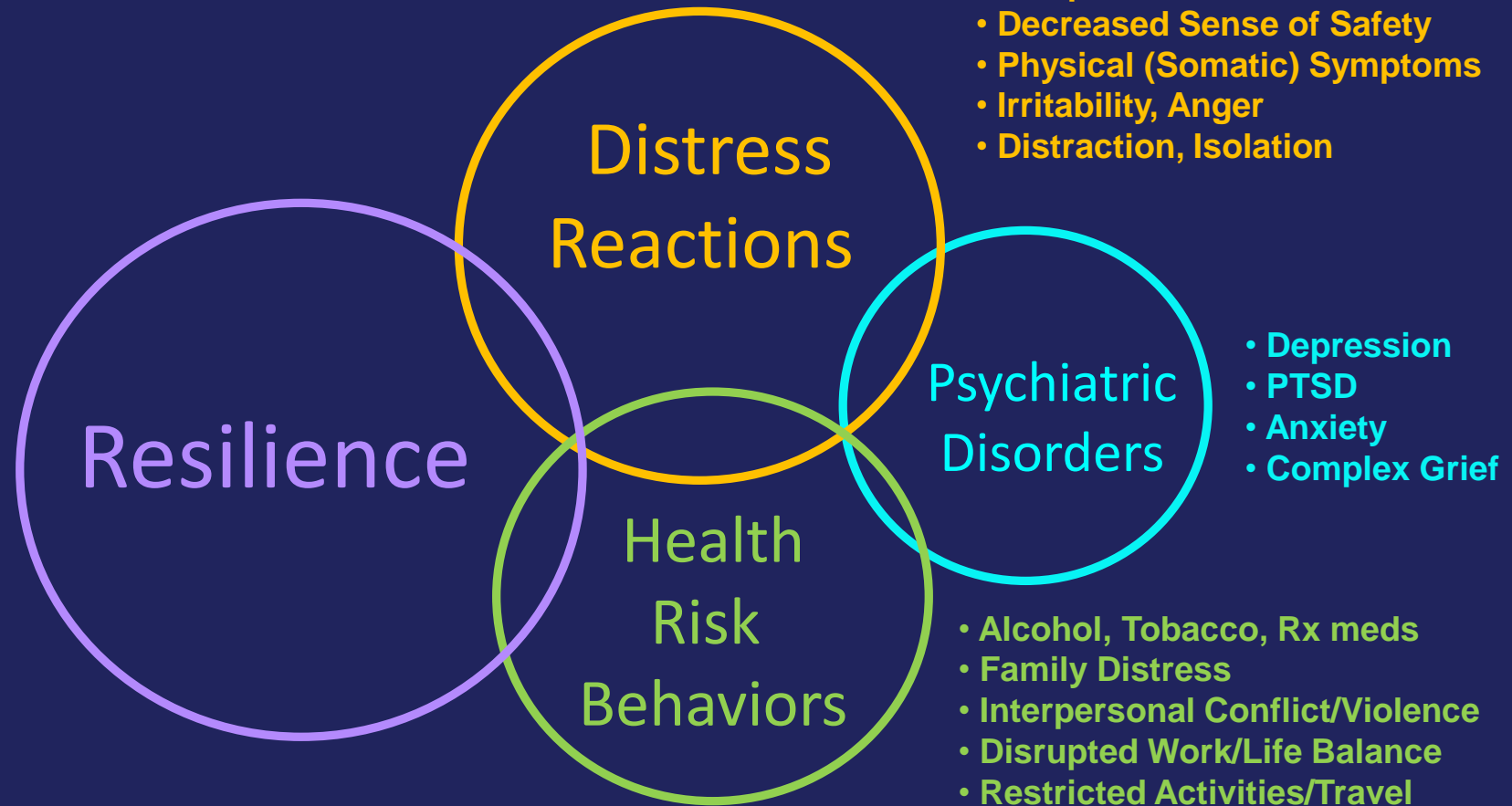
The ideas, attitudes, and opinions expressed herein are my own and do not necessarily reflect those of the Uniformed Services University, the U.S. Public Health Service, the Department of Defense, or other branches of the U.S. government. I am not endorsing any of the entities or resources mentioned in this presentation and have no relevant disclosures or conflicts of interest to report.

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# Psychological & Behavioral Responses to Pandemics/Disaster



Ursano, R., Fullerton, C., Weisaeth, L., & Raphael, B. (2017). Individual and Community Responses to Disasters. In R. Ursano, C. Fullerton, L. Weisaeth, & B. Raphael (Eds.), *Textbook of Disaster Psychiatry* (pp. 1-26). Cambridge: Cambridge University Press.

# “Buddy Up”

- Buddy systems (swim buddy, high risk work “buddy checks”, 12-step pgms)
- Safety, social support, efficacy
- Formal (vs ad hoc) peer support
- Collaborative selection process
- Daily check-ins: self-care, emotional health, camaraderie

## COVID 19 Battle Buddy Support Program

**BATTLE BUDDY CHECK-IN**  
1-10 MINUTES

- Aim to contact your battle buddy once a day during the work week
- Contact can be a quick text to check in, a short call to debrief, a more meaningful conversation to hash something out
- Listen, validate, and provide feedback, identify any issues that need more support or attention
- Identify any operational issues that need escalation

**Sample questions for your check-in:**

- What is hardest right now?
- What worried you today?
- What went well today?
- How are things at home?
- What challenges are you facing with sleep, diet, exercise, healthy nutrition?

**If you and your Battle Buddy are ready to support one another in anticipating and planning for**

### Stress Inoculation

**Working with Your Battle Buddy to Anticipate and Plan for Specific Stressors**

In our Psychological Resilience intervention, after the Battle Buddy program is initiated, a mental health consultant works with small groups of providers in each unit to engage in stress inoculation. They **Anticipate** and **Plan** for the specific stressors they are likely to encounter. The mental health consultant is also available to help **Deter** more serious mental health problems, by working with individuals who experience escalating or cumulative stressors and whose coping responses are getting overwhelmed.

\* Schedule Requisite

If you do not have a mental health consultant available to you, and if your Battle Buddy relationship is strong, you can work with your BB to help each other engage in the **Anticipate** and **Plan** phases of stress inoculation on your own. In your BB conversations, support one another to do the following:

Anticipate
<ul style="list-style-type: none"> <li>• Anticipate and identify the specific stressors you are likely to encounter</li> <li>• Describe your likely responses to these stressors</li> </ul>
Plan
<ul style="list-style-type: none"> <li>• Identify the stressors and responses that will be most difficult for you</li> <li>• Describe your personal resilience plan: How will you cope with these difficult stressors? What resources are available to you? What strengths and resilience factors will you make use of?</li> </ul>
Deter
<ul style="list-style-type: none"> <li>• If you or your Battle Buddy are experiencing escalating or cumulative stressors and coping responses are getting overwhelmed, it is not your BB to be a therapist. Please reach out to the Deter phase by seeking or helping your BB to seek mental health support, pastoral counseling, or connection with EAP.</li> </ul>

Here is a list of potential stressors and resilience factors to help initiate your conversations:

Stressors	Resilience Factors
<ul style="list-style-type: none"> <li>• Experiencing working conditions that are hazardous or have insufficient supplies</li> <li>• Worrying about the safety of your loved ones and/or being unable to return home</li> <li>• Being worried about contracting COVID-19</li> <li>• Witnessing COVID-19 in coworkers</li> <li>• Being asked to perform duties outside of current skills</li> <li>• Being unable to meet patient needs, and/or being responsible for making difficult triage decisions</li> <li>• Being forced to abandon patients</li> <li>• Witnessing an unusually high number of deaths</li> <li>• Witnessing the death of a child, adolescent or young adult</li> <li>• Having direct contact with grieving family members</li> </ul>	<ul style="list-style-type: none"> <li>• Feeling your work was meaningful and contributed to the greater good</li> <li>• Feeling emotionally connected to or supported by someone (family member, friend, coworker, Battle Buddy)</li> <li>• Connecting with your Battle Buddy and receiving validation for your reactions</li> <li>• Getting enough sleep, staying hydrated, having access to food and time to eat</li> <li>• Getting at least 15 minutes of exercise each day</li> <li>• Fostering your positive emotions: expressing gratitude, having compassion for self and others, sharing your story, listening to music, spending time in nature, laughing</li> <li>• Spending time with your religious, faith-based, or spiritual practices</li> </ul>

For more detail, see Albert, McGloth, Whorvik, Wal, Galt, Vengrover. Battle Buddies: Rapid Deployment of a Psychological Resilience Intervention for Quarantined Clinicians. *Prevention and Promotion*, 2020.

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Ramsberger, P. F., Mills, L., & Legree, P. (2002). *Evaluation of the Buddy Team Assignment Program* (p. 60). United States Army Research Institute for the Behavioral and Social Sciences.

# Resetting & Reintegrating



**RECOVERY TIME**



- Time off from work
- Rest, “recover” mind/body
- Critical for sustainment
- “People don’t understand”
- New view of the world
- Harder than “frontlines”?

# QUESTIONS



## COURAGE TO CARE



### Talking with Children about Coronavirus



**BE CALM**



**BE CLEAR**



**BE WITH**



**SOCIETY OF  
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# Covid and the Cardiology Consultant

Dr Junaid Zaman MA BMBCh MRCP PhD  
Royal Brompton Hospital  
London, U.K.

Royal Brompton & Harefield **NHS**  
NHS Foundation Trust



A lifetime of specialist care

# Overview

- Introduction
- Pathophysiology
- Mechanisms of cardiovascular injury
- Risk factors
- Guideline summary
- Diagnosis
- Biomarkers
- Disease manifestations
- Treatment considerations
- QTc monitoring
- Risk stratification
- Conclusions





# Introduction

- Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) causing coronavirus disease 2019 (COVID-19) has reached pandemic levels
- Patients with cardiovascular (CV) risk factors and established cardiovascular disease (CVD) represent a vulnerable population when suffering from COVID-19
- Patients with cardiac injury in the context of COVID-19 have an increased risk of morbidity and mortality.
- CV comorbidities are common in patients with COVID-19 infection;
- CVD risk factors and disease correlate with increasing age



# Pathophysiology

- SARS-CoV-2 is an enveloped, positive-sense single-stranded RNA virus
- SARS-CoV-2 and other similar coronaviruses use the ACE 2 (ACE2) protein for ligand binding before entering the cell via receptor-mediated endocytosis.
- ACE2, which is expressed in the lungs, heart and vessels, is a key member of the renin angiotensin system (RAS) important in the pathophysiology of CVD.
- It is highly expressed in type 2 lung alveolar cells, which provides an explanation for the respiratory symptoms experienced by patients with covid-19.
- More than 7.5% of myocardial cells have positive ACE2 expression, based on single-cell RNA sequencing, which could mediate SARS-CoV-2 entry into cardiomyocytes and cause direct cardiotoxicity.

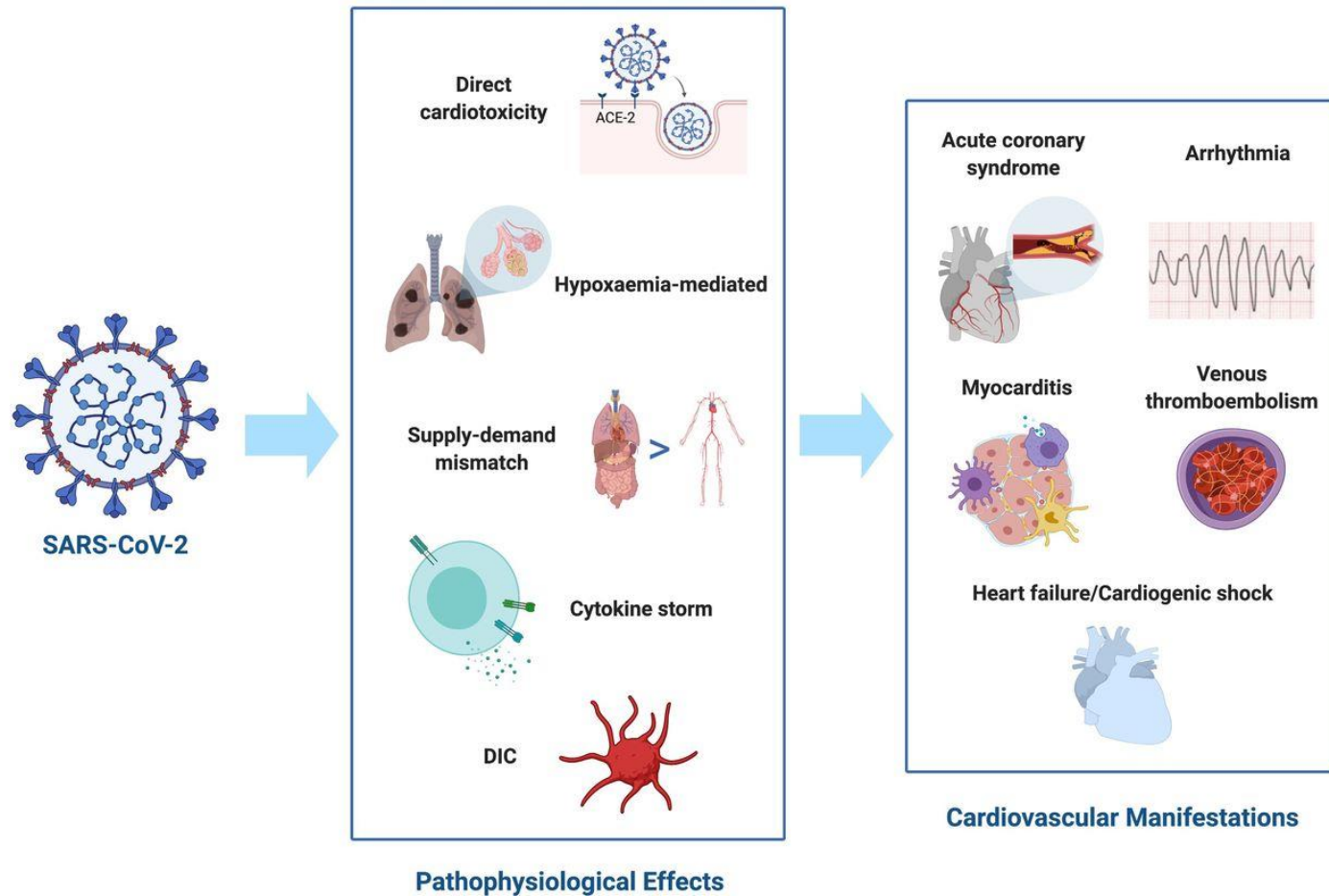


# Mechanisms of cardiovascular injury

- The mechanisms of cardiovascular injury from covid-19 have not been fully elucidated and are likely multifactorial.
- CVD associated with COVID-19, likely involves dysregulation of the RAS/ACE2 system due to SARS-CoV-2 infection and due to comorbidities.
- CVD may be a primary phenomenon in COVID-19, but may be secondary to acute lung injury, which leads to increased cardiac workload, potentially problematic in patients with pre-existing HF.
- Cytokine release storm, originating from imbalance of T cell activation with dysregulated release of interleukin (IL)-6, IL-17 and other cytokines, may contribute to CVD in COVID-19.
- Immune system activation along with immunometabolism alterations may result in plaque instability, contributing to development of acute coronary events.



## Possible Mechanisms of Cardiovascular Injury Due to Covid-19

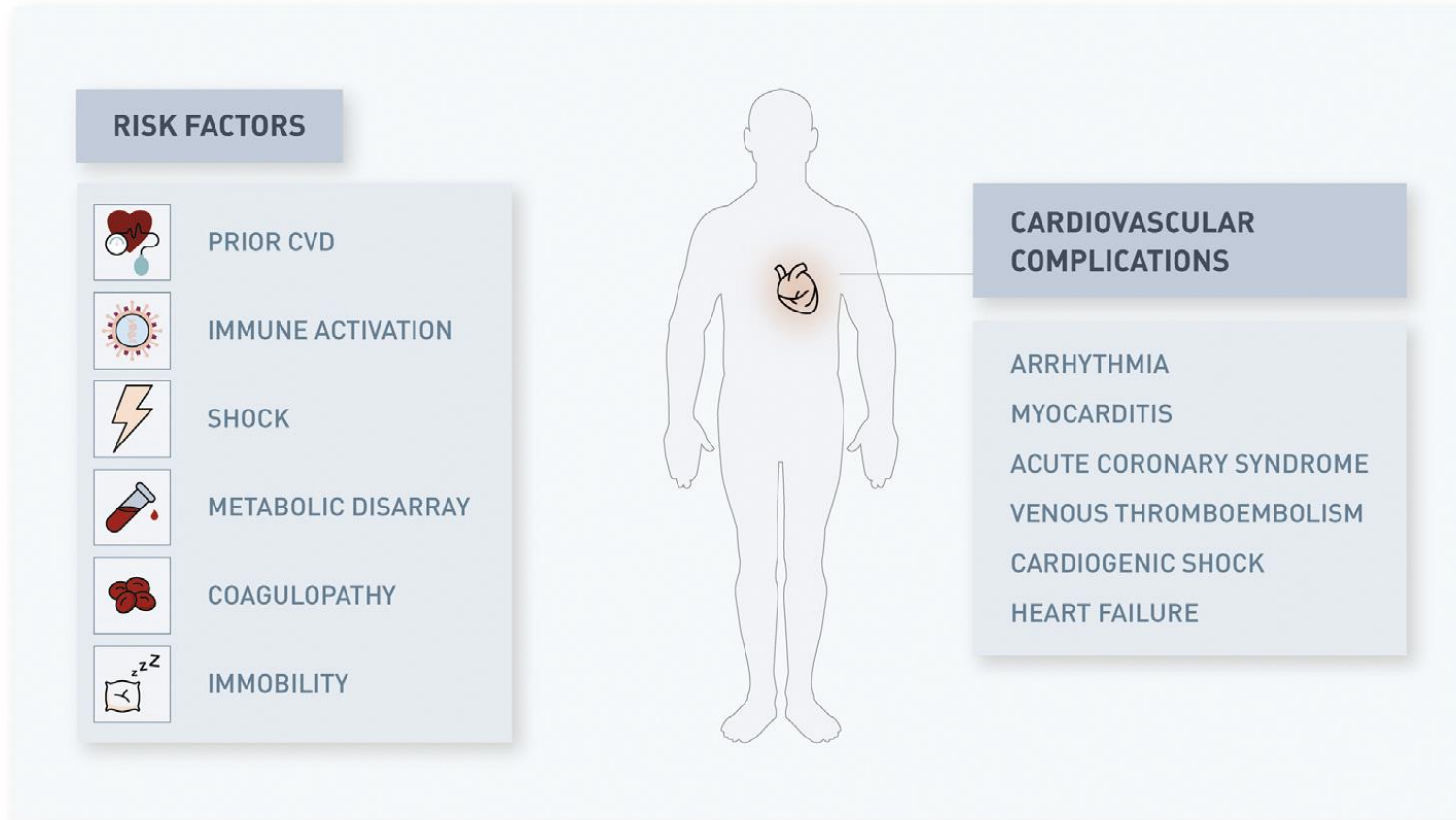


Yu Kang et al. Heart doi:10.1136/heartjnl-2020-317056

**Heart**



# Risk factors



Driggin et al. JACC 2020



# Hypertension

- There is currently no evidence to suggest that hypertension per se is an independent risk factor for severe complications or death from COVID-19 infection.
- Despite much speculation, evidence from a recently published series of observational cohort studies suggests that prior or current treatment with ACEIs or ARBs does not increase the risk of COVID-19 infection, or the risk of developing severe complications from COVID-19 infection when compared to the risk in patients taking other antihypertensive drugs.
- Treatment of hypertension should follow existing recommendations in Guidelines. No change to these treatment recommendations is necessary during the COVID-19 pandemic.





# Summary of Cardiology Society Guidelines

<b>TABLE 7 CV Society Guideline Key Considerations With Regard to CVD and COVID-19</b>	
<b>Society/Guideline (Ref. #)</b>	<b>Key Recommendations</b>
ACC Clinical Guidance (93)	Establish protocols for diagnosis, triage, isolation of COVID-19 patients with CVD or CV complications Develop acute myocardial infarction-specific protocols (i.e., PCI and CABG) for COVID-19 outbreak
ESC Council on Hypertension Statement on COVID-19 (94)	There is insufficient evidence regarding the concerns surrounding safety of ACE inhibitor or ARB treatment in patients with COVID-19 Current recommendations are to continue ACE inhibitor or ARB therapy given no sufficient evidence to discontinue therapy because of this infection
European Society of Hypertension (95)	Patients with hypertension should receive treatment with ACE inhibitors and ARBs according to 2018 ESC/ESH guidelines despite COVID-19 infection status (102) In, the case of shock, health care workers should continue or discontinue ACE inhibitor and ARB therapy on case-by-case basis
Hypertension Canada (96)	Patients with hypertension should continue their home blood pressure medical regimen
Canadian Cardiovascular Society (97)	Continuation of ACE inhibitor, ARB, and ARNI therapy is strongly recommended in COVID-19 patients
Internal Society of Hypertension (98)	Endorse the ESC Hypertension Statement



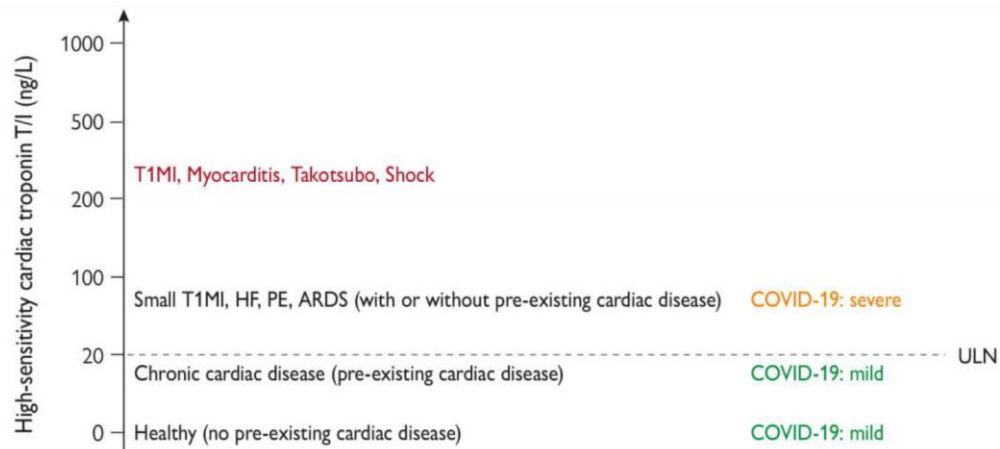
# Diagnosis

- Chest pain and breathlessness is a frequent symptom in COVID-19 infection.
- Chronic and acute coronary syndrome presentations can be associated with respiratory symptoms.
- COVID-19 patients may present with cough, dyspnoea, and ARDS.
- In COVID-19 patients with impaired end-organ perfusion at risk of cardiogenic shock (CS) (e.g. large acute myocardial infarction [AMI]), consider also sepsis as possible or mixed aetiology
- Myocarditis should be considered as precipitating cause of CS.



# Biomarkers

- Cardiomyocyte injury, as quantified by cardiac troponin T/I concentrations, and haemodynamic stress, as quantified by B-type natriuretic peptide (BNP) and N-terminal B type natriuretic peptide (NT-proBNP) concentrations, may occur in COVID-19 infections as in other pneumonias. The level of those biomarkers correlate with disease severity and mortality
- Cardiac troponin T/I and BNP/NT-proBNP concentrations should be interpreted as quantitative variables;



ESC 2020



# Biomarker Data from Royal Brompton Hospital

	<b>Alive</b>	<b>Dead</b>	<b>p</b>
<b>avCreatinine</b>	67 (51 - 30) $\mu$ mol/L	160 (99 -202) $\mu$ mol/L	< 0.001
<b>avCRP</b>	103.6 ( $\pm$ 86.9) ng/ml	235 ( $\pm$ 100.1) ng/ml	< 0.001
<b>avFib</b>	5.7 ( $\pm$ 1.6) g/L	6.3 ( $\pm$ 1.6) g/L	0.044
<b>maxD-Dimer</b>	4816 (2212 - 13362) mcg/L	8410 (3750 - 16365) mcg/L	0.008
<b>maxLDH</b>	1133 (843 - 1601) U/L	1585 (1233 -2470) U/L	< 0.001
<b>max BNP</b>	110.0 (44 - 325) ng/L	225.5 (103 - 457) ng/L	0.024
<b>maxtroponin</b>	47.1 (17.4 - 178.6) ng /L	194.7 (70.9 - 995.9)	< 0.001
<b>RBC transfusion</b>	0 (0 – 4) units	2.5 (0 - 5) units	0.037

Slide courtesy of Dr Ben Garfield from 209 ICU admissions



### **ST Segment Elevation**

- Myopericarditis should be strongly considered in patient with chest pain, ECG changes, and biomarker elevation. Maintain a low threshold to assess for cardiogenic shock in this setting
- Use bedside TTE and possibly CCTA to triage cases prior to cardiac catheterization, Consider a conservative strategy in appropriately selected cases
- Consider bedside pulmonary artery catheterization and bedside IABP placement. IABP may be preferred device for cardiogenic shock due to lower management requirements
- Even if clinical presentation is dominated by cardiac manifestations and there is no fever, COVID-19 should be in differential

### **Cardiogenic Shock**

- Myocardial dysfunction may be caused by direct injury by virus or secondary to cytokine storm
- ECMO provides circulatory (VA) and respiratory support (VV). Low flows on VA ECMO may be sufficient
- Stabilization and recovery of profound cardiac dysfunction related to COVID-19 is possible with temporary mechanical circulatory support
- ECMO requires high resource utilization and should be used judiciously during the COVID-19 pandemic

## **COVID-19 Associated Cardiovascular Disease**

### **Decompensated Heart Failure**

- Preexisting cardiac conditions (congestive heart failure, atrial fibrillation, hypertension) may be exacerbated by COVID-19
- Invasive hemodynamic monitoring may be beneficial in select cases to manage both cardiac and respiratory failure
- The use of QT-prolonging agents (azithromycin, hydroxychloroquine) should be closely monitored in patients with underlying cardiomyopathies

### **Heart Transplant Recipient**

- Heart transplant recipients exhibit similar symptoms of COVID-19 infection as non-transplant population
- Consider holding anti-metabolite (mycophenolate mofetil or azathioprine) in patients requiring hospitalization for COVID-19 infection
- COVID-19 pandemic imposes challenging decisions for heart transplant programs, including maintaining safety of heart failure patients on waitlist and safety of post-transplant patients



# Treatment Considerations

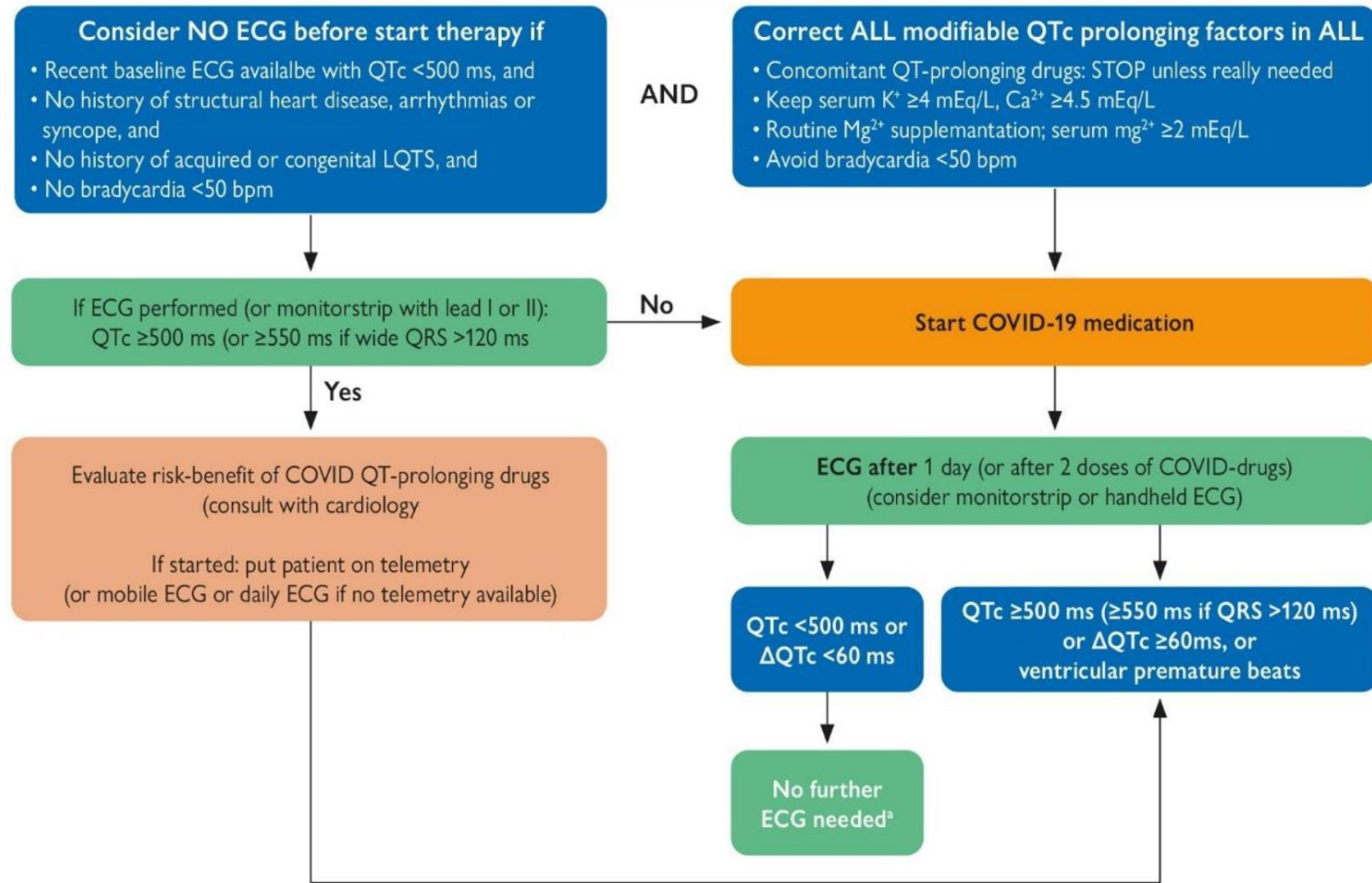
Cardiovascular concerns	Treatment considerations
STEMI and NSTEMI	Primary PCI vs thrombolytics
Myocardial injury	Worse prognosis, monitoring rising trends
Hypercoagulable state	Thromboprophylaxis
ACEI or ARB use	Continue treatment currently, await further studies
HCQ, CQ and/or azithromycin use	QTc monitoring, avoid other QTc prolonging drugs
Immunosuppression/Immunomodulation	Maybe helpful in selected patients with cytokine storm
MCS	IABP and VA ECMO might be used for support in cardiogenic shock

Kang et al. Heart 2020





# QTc monitoring



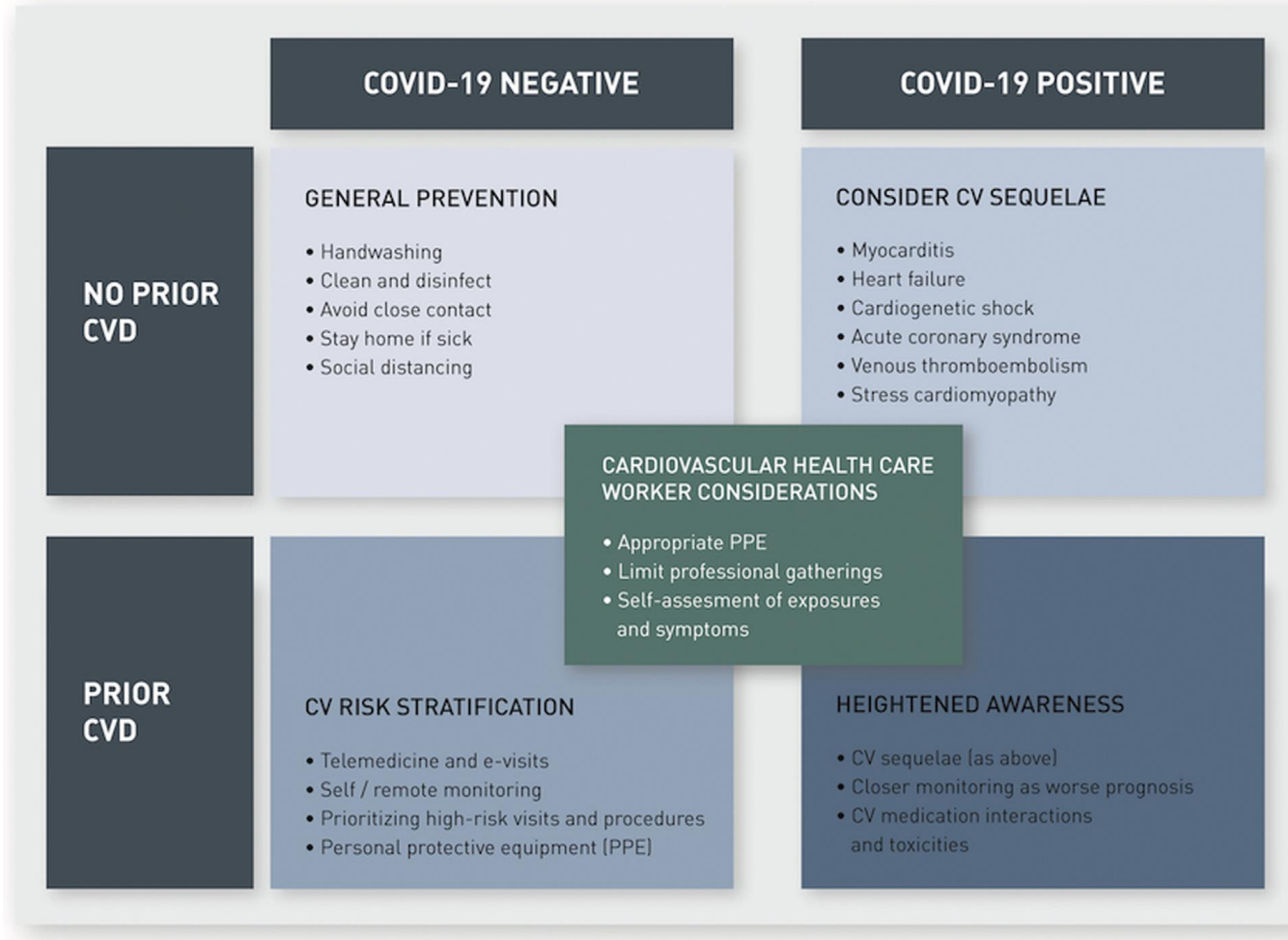
## Drug – drug interactions

Drugs used to cure COVID-19	Interactions	Action
Chloroquine and hydroxychloroquine	Betablockers QT prolonging drugs	Monitor ECG
Methylprednisolone	Warfarin	Monitor INR
Antiretroviral drugs	Warfarin	Monitor INR
	Statins	Start with low dose of rosuvastatin or atorvastatine
	NOACS	Avoid apixaban and rivaroxaban
	Antiarrhythmics	Use QT prolonging or low dose digoxin with caution

ESC 2020



# Key considerations for risk stratification



Driggin et al. JACC 2020



## Conclusions

- Patients with pre-existing CVD appear to have worse outcomes with COVID-19.
- CV complications include biomarker elevations, myocarditis, heart failure, and venous thromboembolism, which may be exacerbated by delays in care.
- Therapies under investigation for COVID-19 may have significant drug-drug interactions with CV medications.
- Health care workers and health systems should take measures to ensure safety while providing high-quality care for COVID-19 patients.







# Thank you!



For more information  
email [info@bedsidemedicine.org](mailto:info@bedsidemedicine.org)  
or visit [www.besidemedicine.org](http://www.besidemedicine.org)



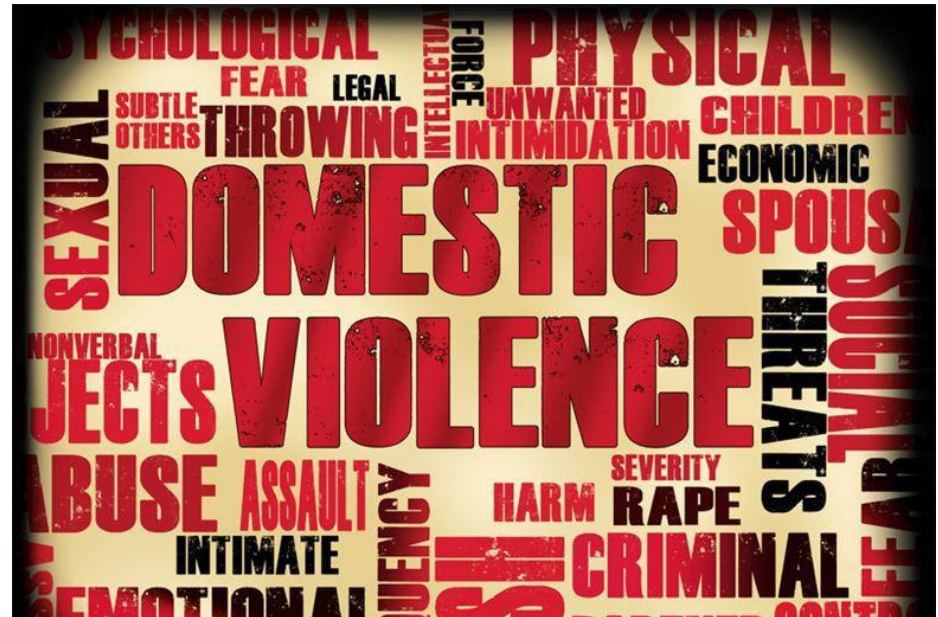


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# Intimate Partner Violence (IPV) Screening and Support for Women Veterans During the COVID-19 Pandemic

Fernanda Rossi, PhD  
Postdoctoral Research Fellow

VA Palo Alto Health Care System  
& Stanford University School of  
Medicine





# **VHA Providers Facing Many Potential Challenges with IPV Screening and Support Due to COVID-19**

- Without appropriate provider practices and cautions, IPV screening via telehealth may put women veterans at even greater danger
- Women veterans experiencing IPV may have difficulties finding safe and private locations to speak with a healthcare provider
- Limited resources for women experiencing IPV during COVID-19



# VHA Working to Address Challenges with IPV Screening and Support During COVID-19

- Efforts led by Intimate Partner Violence Assistance Program (IPVAP)

## **IPV Screening:**

- Adapt environmental safety check protocol for telehealth

## **IPV Support:**

- Multi-method approach targeting staff and veterans
- Raise awareness and provide education
- Update and disseminate resource and referral information
- Transition IPV-related services to telehealth



# **Additional Solutions Needed to Address Challenges with IPV Screening and Supporting During COVID-19**

- Establish VHA secure messaging
- Place informational brochures at essential businesses
- Partner with media outlets
- Continue coordination and partnerships with internal VHA programs and external programs



# Acknowledgements

## **Collaborators:**

Megha Shankar

Kelly Buckholdt

Yuki Bailey

Sonoo Thadaney Israni

Katherine Iverson

## **More on this topic:**

Trying Times and Trying Out

Solutions: Intimate Partner Violence

Screening and Support During

COVID-19 (in press)

*Journal of General Internal Medicine*

## **Contact:**

[fsrossi@stanford.edu](mailto:fsrossi@stanford.edu)



# Hidden and Here



For more information  
email [info@bedsidemedicine.org](mailto:info@bedsidemedicine.org)  
or visit [www.besidemedicine.org](http://www.besidemedicine.org)

Megha Shankar, MD

Health Services Research and Development Fellow,  
VA Palo Alto Health Care System

Postdoctoral Fellow, Stanford University, Primary Care  
Outcomes Research

