

# COVID-19 & Sudden Cardiac Arrest

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**1<sup>st</sup> Report** in Lombardia Region, Italy – Lodi, Cremona, Pavia, Mantua <sup>1</sup>



**2019**

**FEB 21 – MAR 31**  
229 OHCA



**2020**

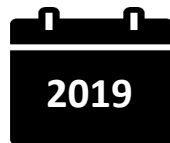
**FEB 21 – APR 1**  
362 OHCA

**58%**  
Increased  
OHCA

**Gap: No clear demonstration of a relationship between increased OHCA incidence and COVID-19**



**2<sup>nd</sup> Study** in Lombardia Region, Italy – Lodi, Cremona, Pavia, Mantua <sup>2</sup>



**2019**

**FEB 21 – APR 20**  
321 OHCA



**2020**

**FEB 21 – APR 20**  
490 OHCA

**52%**  
Increased  
OHCA

**Conclusion: Increase in OHCA in 2020 was shown to be significantly related to the COVID-19 pandemic**

OHCA – Out of Hospital Cardiac Arrest

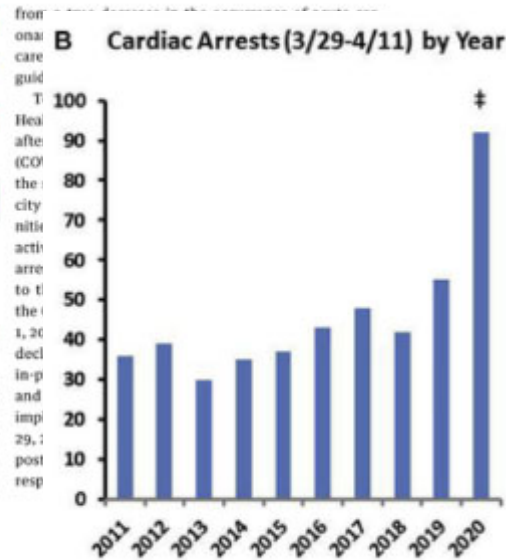
# COVID-19 & Sudden Cardiac Arrest

1. Agar AW, Ouzounian M, Adams C, et al. 2019 Canadian Cardiovascular Society position statement for transcatheter aortic valve implantation. *Can J Cardiol* 2019;35:1437-48.
2. Rockwood K, Song X, MacKnight C, et al. A global clinical measure of fitness and frailty in elderly people. *CMAJ* 2005;173:489-95.
3. Siris M-J, Griffith L, Perry J, et al. Measuring frailty can help emergency departments identify independent seniors at risk of functional decline after minor injuries. *J Gerontol Ser A Biol Sci Med Sci* 2012;72:68-74.

## RESEARCH CORRESPONDENCE

### Excess Cardiac Arrest in the Community During the COVID-19 Pandemic

Recently, Garcia et al. (1) and Rodriguez-Leor et al. (2) demonstrated a 38% to 40% reduction in presentations for acute cardiac catheterization laboratory activations across a consortium of high-volume primary percutaneous intervention centers correlating with the implementation of nationwide social distancing recommendations. Multiple theories have been proposed to explain this observation, ranging



Denver, CO: 2.2 fold higher OHCA in 2020 compared with averaged historical controls over the same 2-week period

Source: Holland, M., Burke, J., Hulac, S., Morris, M., Bryskiewicz, G., Goold, A., ... & Stauffer, B. L. (2020). Excess Cardiac Arrest in the Community During the COVID-19 Pandemic. *Jacc. Cardiovascular Interventions*, 13(16), 1968.

## ARTICLE

### Cardiac Arrest Resuscitations in NYC 3 Times Higher During COVID-19

JUN 22, 2020 | JOHN PARKINSON



Heart disease continues to be the no. 1 leading cause of death in the US. And for those with heart disease and living in New York City during the coronavirus 2019 (COVID-19) outbreak, these factors have led to more people experiencing heart attacks and out-of-hospital resuscitations.



New York City: 3 times more OHCA resuscitations in 2020vs. the same time in 2019

Source: Lai PH, Lancet EA, Weiden MD, et al. Characteristics Associated With Out-of-Hospital Cardiac Arrests and Resuscitations During the Novel Coronavirus Disease 2019 Pandemic in New York City. *JAMA Cardiol*. Published online June 19, 2020. doi:10.1001/jamacardio.2020.2488

# Post COVID-19 Recovery & Heart Damage



**What are cardiovascular effects in patients recently recovered from COVID-19? (Published July 27, 2020)**



100 patients recovered from COVID-19; most were asymptomatic/had mild symptoms; median age 49



Researchers performed MRI scan of patients' hearts an average of 2 months after they were first diagnosed with Covid-19



78% of patients had ongoing heart abnormalities and 60% had myocarditis, inflammation of the heart muscle – which can put you at risk for complications including heart arrhythmias, heart failure, and sudden cardiac death.

# Post COVID-19 Recovery & Heart Damage



- 20% - 30% of hospitalized patients have cardiovascular injuries
- 40% of deaths are attributed to cardiovascular injuries

## AHA Explains Severe COVID-19 is Closely Associated With Heart Issues



*COVID-19 has a big impact on the heart, and patients with pre-existing cardiovascular disease have at least a 10 percent higher risk of death and severe complications due to the virus. The virus also can cause myocarditis, blood clotting, and impact the cardiovascular system due to severe, hyperactive*

“

***“...several devastating complications of COVID-19 are cardiac in nature and may result in lingering cardiac dysfunction beyond the course of the viral illness itself.”***

–Mitchell S. V. Elkind, M.D., MS, FAHA, FAAN, president of the American Heart Association (AHA)

”

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# Myocarditis Facts

A rare heart condition that could be linked with COVID-19 and is fueling concern about the viability of school sports programs and student athlete activity this Fall.

- ***Myocarditis is an inflammation of the heart muscle*** and has been found in at least five (5) Big Ten Conference athletes and among several other athletes in other conferences.<sup>1</sup>
- The inflammation can turn to scar tissue and put the patient ***at risk for an irregular heartbeat that can lead to sudden cardiac arrest (SCA)***, which can be triggered by exercise.
- Myocarditis causes about ***75 deaths per year in young athletes between the ages of 13 and 25***, often without warning<sup>2</sup>.

<sup>1</sup> [https://www.espn.com/college-football/story/\\_/id/29633697/heart-condition-linked-covid-19-fuels-power-5-concern-season-viability](https://www.espn.com/college-football/story/_/id/29633697/heart-condition-linked-covid-19-fuels-power-5-concern-season-viability)

<sup>2</sup> <https://www.axios.com/coronavirus-myocarditis-sudden-heart-attack-death-athletes-college-0ddae223-07ee-4a95-acbb-ca18b9e07b31.html>



# Myocarditis – Why You Need an AED

- The best way to assess risk is to have a heart screening. EKG will show impact on the heart.
- Having an AED on-site is an “insurance policy” for all athletes, student-athletes and for the general public who exercise and engage in activities that raise their heart rate.
- Organizations will not always know who has had a screening (and who hasn’t) so access to an AED and being prepared for a cardiac emergency is more important now more than ever.
- LifeGuard MD can help you determine proper placement, number of units needed and provide all policies and procedures for use of an AED.

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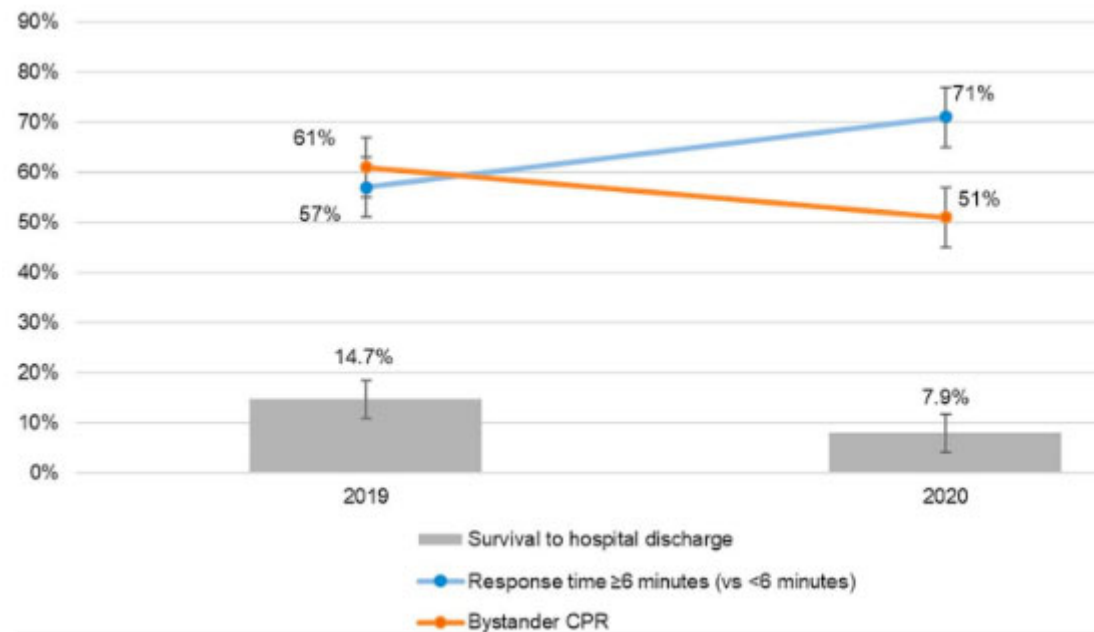
# Increase in OHCA During COVID-19 Around the World

- Studies around the world have shown an increase in OHCA during COVID-19
- Several factors are driving this increase
  - Hesitancy to go to the hospital and seek care due to COVID
  - Increase in EMS response times due to teams being stretched thin due to COVID
  - Underlying cardiovascular issues before having COVID
  - Cardiovascular issues or Myocarditis as a result of having COVID

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# Early Intervention Directly Related to OHCA Survival Rates

- In a recent study looking at two regions within the US the authors saw an impact on survival from OHCA from an average of **14.7% down to an average of 7.9%**.
- In the study the authors evaluated the possible reason behind this and saw a decrease in both bystander CPR and Bystander CPR/AED use, this was coupled with increased EMS response times.



- Fewer people providing bystander CPR, a 10% decrease from pre-pandemic levels of 61% down to 51%.
- Fewer people providing bystander CPR and early defibrillations, decrease from 5% to 1%.
- Average EMS response time has increased from 6.6 minutes to 7.6 minutes.



# Media Reports & Scientific Observations

## MANY COVID-19 PATIENTS ARE DYING FROM CARDIAC ARREST

THE DISCOVERY HAS DOCTORS MYSTIFIED.

BY VICTOR TANGERMUN / APRIL 07 2020

A recent study by Chinese researchers found that as many as one in five COVID-19 patients experienced cardiac damage, heart failure — and, in some instances, death.

Future Medicine

JOURNALS BOOKS ABOUT US CONTACT US

FUTURE CARDIOLOGY, AHEAD OF PRINT | CASE SERIES

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Sudden cardiac death in COVID-19 patients, a report of three cases

Bamir Shikazi, Sana Mami, Nezar Mohamed, Abbas Ghayour, Famed Toivan, Ali Nazari, Habib Roshanrubi & Brian McKeown

## Cardiac injury, arrhythmia, and sudden death in a COVID-19 patient.

Beri A<sup>1</sup>, Kotak K<sup>2</sup>

Author information ▶

Heartrhythm Case Reports, 13 May 2020, 6(7):367-3

DOI: 10.1016/j.hrcr.2020.05.001 PMID: 32405457

Free to read & use ⓘ

Singapore

Doctors in Singapore advised to look out for blood, heart problems in COVID-19 patients

Four COVID-19 cases in Singapore died in May because of heart-related issues, and not of the disease.



CORONAVIRUS

## w potential risk of COVID-19: Sudden cardiac death

Paul Basilio, MDLinx | March 27, 2020

Thursday afternoon, the total number of confirmed COVID-19 cases is 521,086, with 23,568 deaths globally. In the United States, the number of cases has increased to 79,785, with 1,124 deaths across all 50 states plus Washington, DC.

PracticeMatch



COVID-19 outbreak | Latest updates on the coronavirus and heart disease

FIND OUT MORE

## People with underlying health conditions, such as heart disease, are more vulnerable to COVID-19

By the beginning of 2020, when we heard of a novel coronavirus with potentially severe consequences, the race was on to learn everything we could and should about it. Before long, and with so much still to be discovered, an unfortunate trend emerged: COVID-19 posed a particular risk to patients with underlying issues such as heart disease, which is already the leading cause of death on the planet.

ZOLL

# Media Reports & Scientific Observations

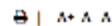
Home > Nation

## Italian tourist, who 'recovered' from COVID-19, dies in Jaipur hospital

The sexagenarian was a heart and lungs patient, and recovered from COVID-19 at the SMS Hospital, according to Bhandari.



Published: 20th March 2020 11:58 AM | Last Updated: 20th March 2020 01:14 PM



WORLD, ASIA PACIFIC, LATEST ON CORONAVIRUS OUTBREAK

### Pakistan: Lawmaker dies after recovering from COVID-19

Munir Orakzai, a member of National Assembly, died of cardiac arrest, family says

Aamir Latif | 02.06.2020

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12K

## From 'brain fog' to heart damage, COVID-19's lingering problems alarm scientists

By Jennifer Couzin-Frankel | Jul. 31, 2020, 1:30 PM

Science's COVID-19 reporting is supported by the Pulitzer Center and the Heising-Simons Foundation.

Science's COVID-19 reporting is supported by the Pulitzer Center and the Heising-Simons Foundation.

THIS STORY IS FROM MAY 6, 2020

## Coronavirus in Tamil Nadu: Woman dies of cardiac arrest after 'recovering' from Covid-19

Karal Marx | TNN | May 6, 2020, 13:18 IST



Coronavirus pandemic

### Patient who recovered from Covid-19 dies of heart disease



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Three-quarters of adults with COVID-19 have heart damage after recovery

## Three-quarters of adults with COVID-19 have heart damage after recovery



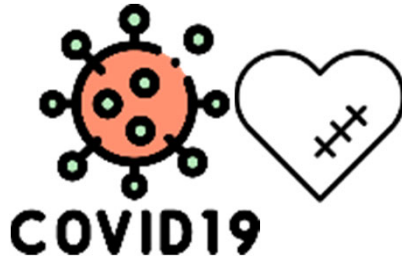
# Breaking it Down



Increased incidence of SCA during epidemic x 52%



1 in 3 people with COVID-19 has CVD



Studies point to COVID-19 contributing to irregular heartbeats, inflammation of the heart muscle, reduced blood flow to the heart and sudden cardiac death



Three quarters of adults who had COVID-19 had heart damage after recovery

# What's the Message?

- ✓ Take COVID-19

**SERIOUSLY.**



- ✓ Don't catch it. Observe safety procedures.
- ✓ Never ignore symptoms of a heart attack, stroke or other condition that should be treated in an emergency room.



- ✓ Have access to an AED



# Early Intervention and AEDs Help Save Lives

- It is more important now than ever to have AEDs available
- There is a great opportunity to sell since there is an increased reason to buy
- ZOLL AEDs support rescuers with real-time, guideline-driven CPR feedback



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# The ZOLL Difference: Our CPR Story

Only ZOLL AEDs provide **Real-time, Guideline-driven, measurement and feedback** on the **quality of CPR** being performed.

**Real-time CPR feedback has been clinically shown to:**

- Improve CPR quality by a factor of 5
- More than double a cardiac arrest victim's chances of survival.





# Most Importantly....

**Insure against any cardiac arrest event.**

- Invest in a ZOLL AED – which will guide a rescuer in performing **Real-time, Guideline-driven, measurement and feedback** on the **quality of CPR** being performed.
- No other AED can do what ZOLL AEDs do.
- Contact **LifeGuard MD** to see which model is best for your situation. 877-868-4141



## In SCA Victims:

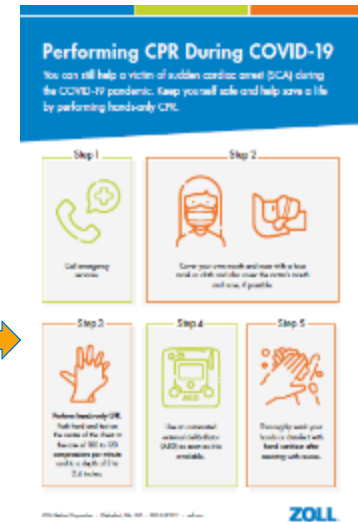
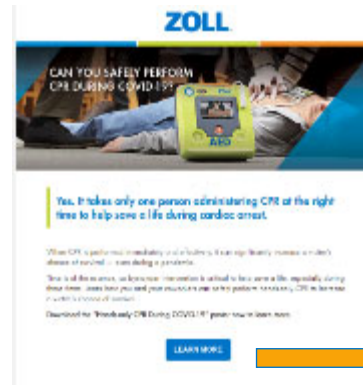
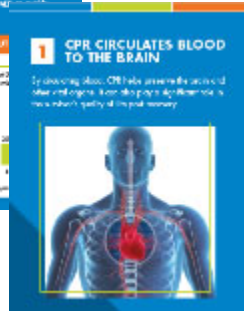
50% needs shocking

100% needs CPR



# Tools to Help: SCA & CPR during COVID-19

- Learn new CPR guidelines
- Understand Heart Attack vs. SCA
- CPR eBook
- Provide CPR training and AEDs
- Location posters for placement of where the closest AED is located





# Tools to Help Provide Workplace Safety & Health

- COVID Health & Safety Plan
- Proper Placement of AEDs in your Workplace
- Training on CPR and use of AEDs
- Stress the Importance of Bystander Intervention
- Contact LifeGuard MD at 877-868-4141 for more information

**IS AN AED PART OF YOUR WORKPLACE COVID-19 HEALTH AND SAFETY PLAN?**

Hand Sanitizer    Personal Protective Equipment    AED

Your own plan has a COVID-19 health and safety plan with hand sanitizer and PPE (personal protective equipment), but does it include an automated external defibrillator (AED)? Are you prepared to save an employee from sudden cardiac arrest?

Sudden cardiac arrest (SCA) happens in a split second, it starts ticking in the race to restore a normal rhythm to a victim, who performs CPR, is the victim's best chance of survival.

Learn more about AEDs, and how they can help in your life. See reasons your workplace needs...

## SOME DECISIONS REALLY ARE LIFE AND DEATH

### SIX REASONS YOUR WORKPLACE NEEDS AN AED

Download PDF

- SCA doesn't discriminate.** It can affect anyone and anyone at any time. It's a leading cause of death in the U.S. and a leading cause of death in the workplace.
- SCA is a leading cause of death in the U.S.** SCA is a leading cause of death in the U.S. and a leading cause of death in the workplace.
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**ARE YOU HEART SMART?**

**DO YOU KNOW WHAT TO DO?**

**PREPARE TO RESPOND**

**KNOW YOUR RIGHTS**

**KNOW YOUR RESPONSIBILITIES**

**KNOW YOUR LOCATION**

**KNOW YOUR AED**

**KNOW YOUR TRAINING**

**KNOW YOUR SUPPORT**

**ZOLL**

- See reasons why your workplace needs an AED and how to take the next steps to get one.
- 1. SCA is a leading cause of death in the U.S.** SCA is a leading cause of death in the U.S. and a leading cause of death in the workplace.
  - 2. SCA is a leading cause of death in the U.S.** SCA is a leading cause of death in the U.S. and a leading cause of death in the workplace.
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