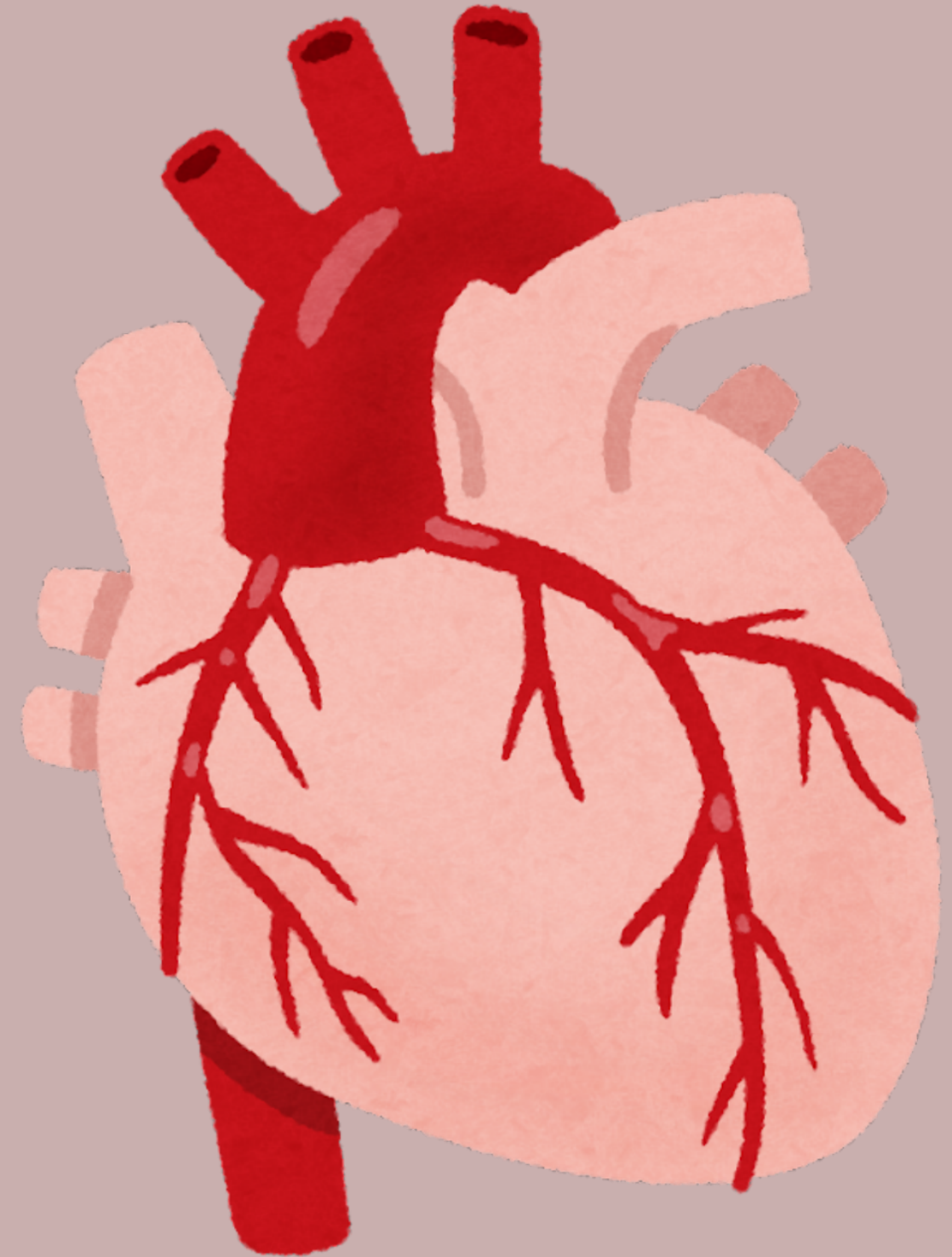
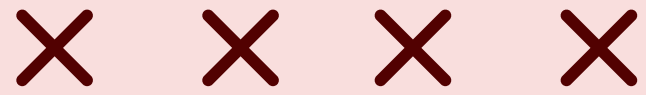




# **OOHCA & AED**

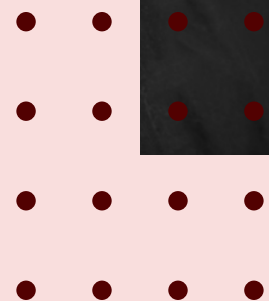
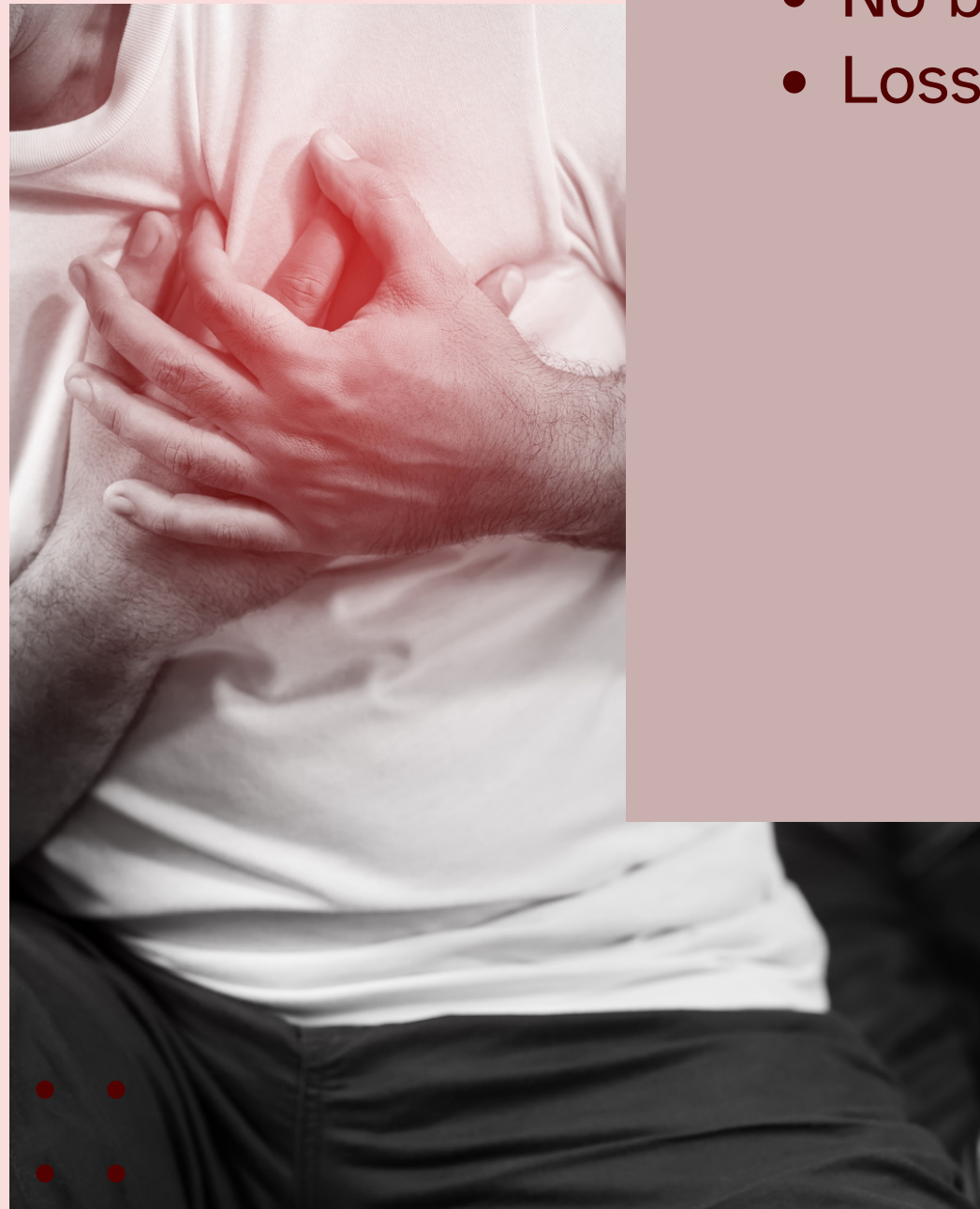
**Alex Marchbanks BSN, RN, CCRN**





### Signs of OOHCA

- Sudden collapse.
- No pulse.
- No breathing.
- Loss of consciousness.



# INTRODUCTION

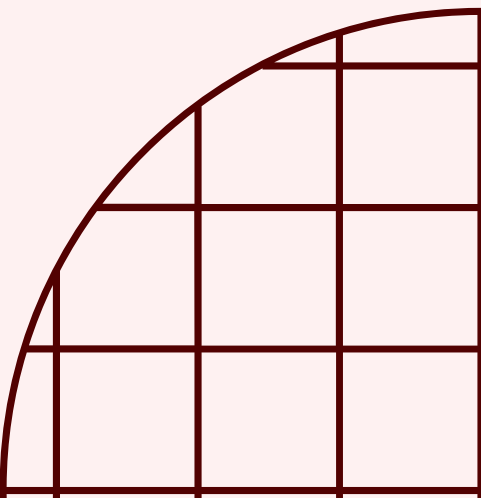
## **OOHCA**-Out of Hospital Cardiac Arrest

An event where someone suddenly goes into cardiac arrest and will die if they don't get immediate help.

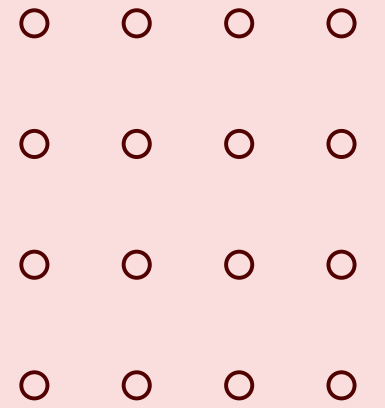
Two Primary ways to give help before EMS arrive:

**CPR**-manual resuscitation

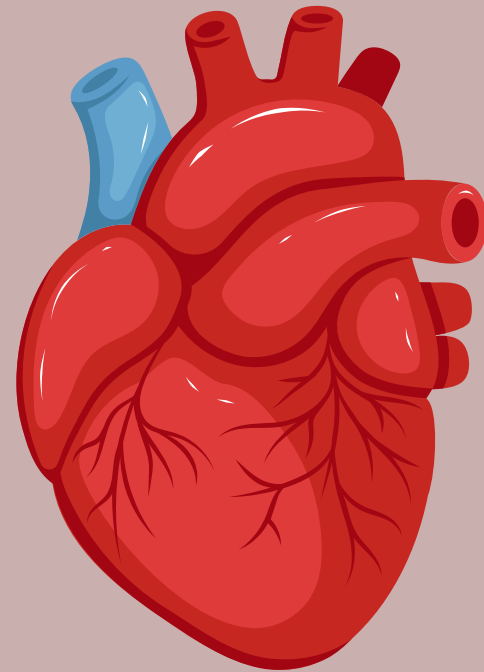
**AED**- Automated External Defibrillator



# WHAT IS OOHCA?



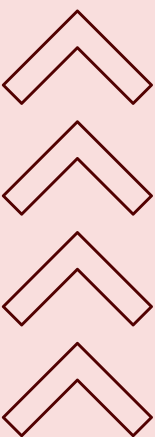
**LOSS OF  
MECHANICAL  
FUNCTION**



**LOSS OF SYSTEMIC  
CIRCULATION**



**OCCURS  
OUTSIDE OF  
HOSPITAL  
SETTING**

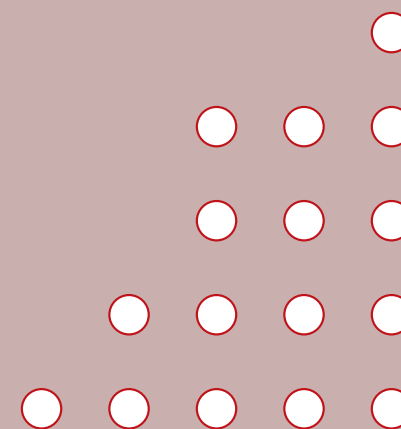


# WHAT IS AED

- Analyzes Heart Rythmn
- Shocks if needed
- Prompts user with Audio Directions
- Safety Measures to prevent inappropriate use.

## PURPOSE

Save llives  
Give EMS time to arrive  
Anyone can use it



**During OOHCA, survival chances drop 7-10% for every minute without defibrillation**



# STATS



## AEDS IN PUBLIC PLACES IMPROVE THE CHANCES OF SURVIVAL FROM SUDDEN CARDIAC ARREST



**350,000**

The number of out-of-hospital sudden cardiac arrests each year in the U.S.<sup>1</sup>



**90%**

The percentage of out-of-hospital SCA events that are fatal.<sup>2</sup>



The percentage of Americans who believe the following places should have an automated external defibrillator (AED) installed:<sup>3</sup>



**83%**

**HEALTHCARE FACILITY**

(ex., hospitals, urgent care clinics, doctor's offices, nursing homes)



**69%**

**HOTEL**



**62%**

**RESTAURANT**



**54%**

**RETAIL STORE**



**74%**

**TRANSPORTATION FACILITY**

(e.g., airport, train station)



**72%**

**GOVERNMENT-OWNED FACILITY**

(e.g., court house, DMV, recreation center)



**76%**

**FITNESS CENTER**

**39%**



The percentage of out-of-hospital cardiac arrest that occur in public settings.<sup>4</sup>

**66%**



The percentage of victims in North America who survived to hospital discharge after a bystander delivered an AED shock.<sup>5</sup>

**1,700**



The estimated number of lives saved in the U.S. each year due to bystanders using AEDs.<sup>6</sup>



Be **READY™** for sudden cardiac arrest with AED Products and Services from Cintas. To learn more, visit [www.cintas.com/firstaidsafety/automatic-external-defibrillator/](http://www.cintas.com/firstaidsafety/automatic-external-defibrillator/).

### REFERENCES

<sup>1</sup> American Heart Association: <https://www.ahajournals.org/doi/abs/10.1161/CIR.0000000000000558>

<sup>2</sup> American Heart Association: <https://www.ahajournals.org/doi/abs/10.1161/CIR.0000000000000558>

<sup>3</sup> 2018 Harris Poll

<sup>4</sup> American Heart Association: [https://cpr.heart.org/AHA/ECC/CPRAndECC/AboutCPRECC/CPRFactsAndStats/UCM\\_475748\\_CPR-Facts-and-Stats.jsp](https://cpr.heart.org/AHA/ECC/CPRAndECC/AboutCPRECC/CPRFactsAndStats/UCM_475748_CPR-Facts-and-Stats.jsp)

<sup>5</sup> American Heart Association: <https://newsroom.heart.org/news/cardiac-arrest-survival-greatly-increases-when-bystanders-use-an-automated-external-defibrillator>

<sup>6</sup> American Heart Association: <https://newsroom.heart.org/news/cardiac-arrest-survival-greatly-increases-when-bystanders-use-an-automated-external-defibrillator>

# IMPACT IN NC

- Nearly 19000 OOHCA in NC in 2023
- NC Survival Rates: 8-11%
- Events in more rural areas were less likely to have used AED prior to EMS
- Rural Areas took EMS longer to reach the scene
- NC survival rates widely vary, but rural areas need new efforts to optimize care

**Table 1 County and cardiac arrest characteristics according to tertile of survival**

†

| Variable                                           | Overall                | Lowest tertile of survival with CPC 1 or 2 (n=2,333) | Middle tertile of survival with CPC 1 or 2 (n=4,069) | Highest tertile of survival with CPC 1 or 2 (n=12,168) | p-value |
|----------------------------------------------------|------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------|---------|
| Cardiac arrest at home, n (%)                      | 15,723 (84.7)          | 2,071 (88.8)                                         | 3,586 (88.3)                                         | 10,066 (82.7)                                          | <0.0001 |
| Shockable rhythm, n (%)                            | 4,102 (22.1)           | 472 (20.2)                                           | 886 (21.8)                                           | 2,744 (22.6)                                           | <0.0001 |
| Bystander initiated CPR, n (%)                     | 7,450 (40.1)           | 876 (37.6)                                           | 1,785 (43.9)                                         | 4,789 (39.4)                                           | <0.0001 |
| AED applied prior to EMS arrival, n (%)            | 9,022 (48.6)           | 625 (26.8)                                           | 1,972 (48.6)                                         | 6,425 (52.8)                                           | <0.0001 |
| Defibrillation prior to EMS arrival, n (%)         | 2,147 (11.6)           | 174 (7.5)                                            | 487 (12.0)                                           | 1,486 (12.2)                                           | <0.0001 |
| Population density per square mile, median (Q1-Q3) | 1080.7 (2814–2419.1)   | 244.1 (82.3–637.3)                                   | 306.6 (135.6–746.8)                                  | 1769.7 (684.8–2935.3)                                  | <0.0001 |
| African American (%), median (Q1-Q3)               | 15.7 (5.8–33.3)        | 15.2 (3.5–30.3)                                      | 7.6 (2.1–18.0)                                       | 19.7 (8.4–40.1)                                        | <0.0001 |
| High school diploma or higher (%), median (Q1-Q3)  | 59.8 (53.9–65.0)       | 56.4 (51.3–61.6)                                     | 59.9 (55.5–64.6)                                     | 60.1 (53.4–66.0)                                       | <0.0001 |
| Unemployment (%), median (Q1-Q3)                   | 5.3 (3.7–8.2)          | 6.7 (4.4–9.6)                                        | 5.7 (3.8–8.3)                                        | 5.0 (3.4–7.8)                                          | <0.0001 |
| % rural                                            | 0.9 (0.0 – 47.8)       | 59.4 (8.0 – 96.1)                                    | 44.1 (5.8 – 90.1)                                    | 0.0 (0.0 – 8.3)                                        | <0.0001 |
| Median household income (USD), median (Q1-Q3)      | 49,840 (37,434–64,292) | 43,125 (36,580–52,571)                               | 49,792 (40,568–58,090)                               | 52,691 (36,204–68,016)                                 | <0.0001 |



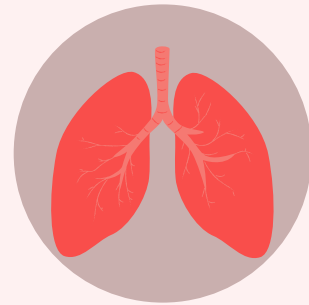
# WHEN SHOULD I USE AN AED?



**Unconscious**



**No Pulse**



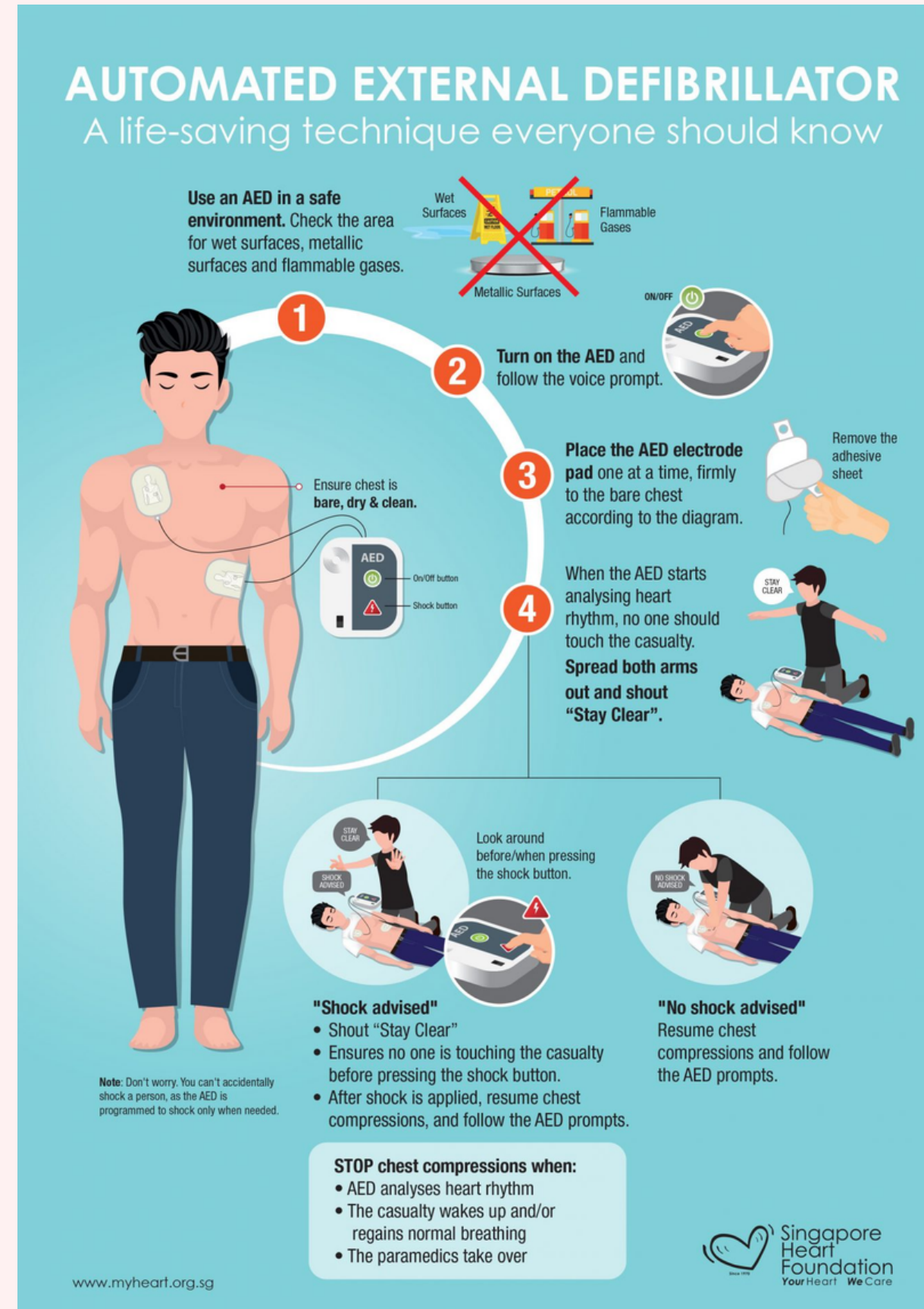
**Not Breathing**



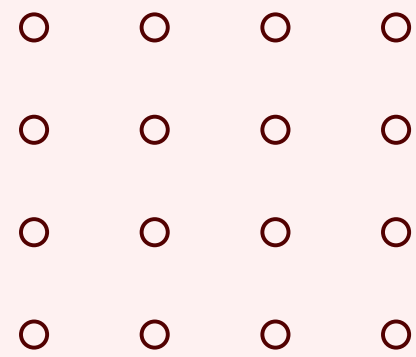
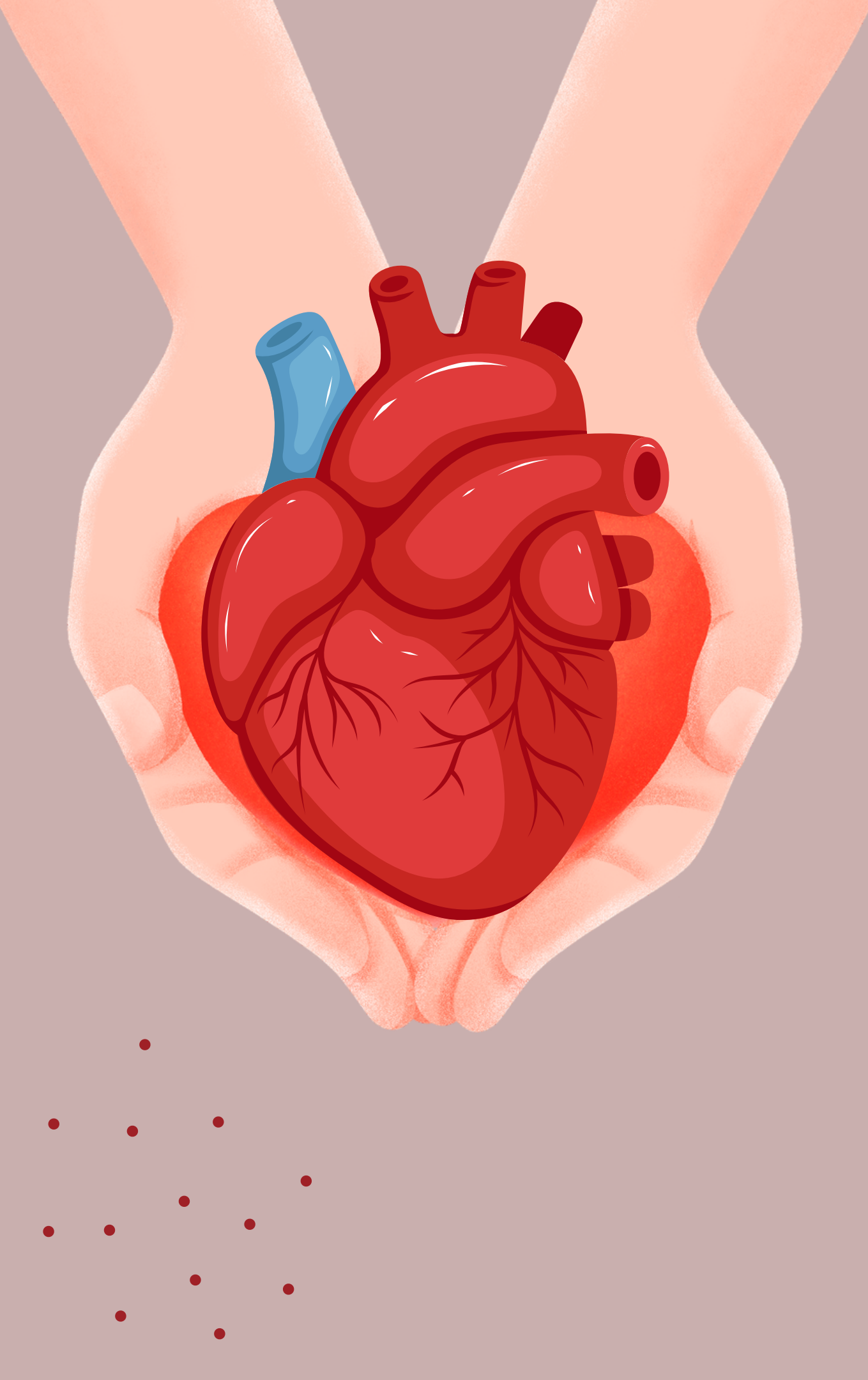
# HOW DO I USE AN AED?



1. Check Area
2. Turn On
3. Follow Voice Prompt
4. Connect Electrode
5. Follow Prompts

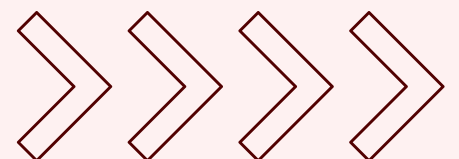


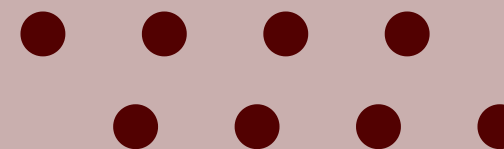
- Shock Advised- shout "Stand Clear" and push button
- Shock Not Advised- Resume CPR
- Continue cycle until patient arouses, regains pulse or EMS arrives



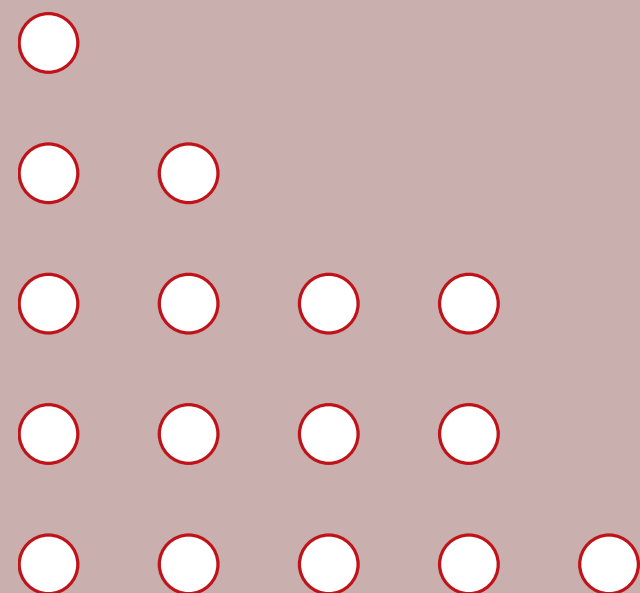
# CONCLUSION

- OOHCA can happen anywhere, anytime.
- AED can dramatically increase the survival chances of someone going through cardiac arrest.
- Great way to keep Businesses and Communities safe.
- Anyone can do it!





**THANK YOU**



# References

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