



# Addressing Sudden Cardiac Arrest: An Analysis of the Efficacy and Implementation of Automated External Defibrillators in New Jersey Schools

# BACKGROUND

- Out of hospital sudden cardiac arrest (OHSCA) is a major health concern, with low survival rate (1)
- When used properly, AEDs have been shown to decrease the mortality associated with OHSCA (2)
- In 2014, New Jersey passed Janet's Law to mandate AED access in all public and private schools
- Our project surveyed NJ public and private schools of all levels to evaluate the implementation and maintenance of AEDs and to analyze the AED usage and its outcomes

## METHODS

- This was an observational, cross sectional study utilizing an online survey form via RedCap 12.4.2
- We included NJ public and private school principals and nurses, and have been collecting data since March 2023.
- Data Analysis SAS version 9.4
- We analyzed demographic data of school characteristics, AED training, AED availability, medical emergencies when AEDs were utilized, and outcomes of those events

# RESULTS

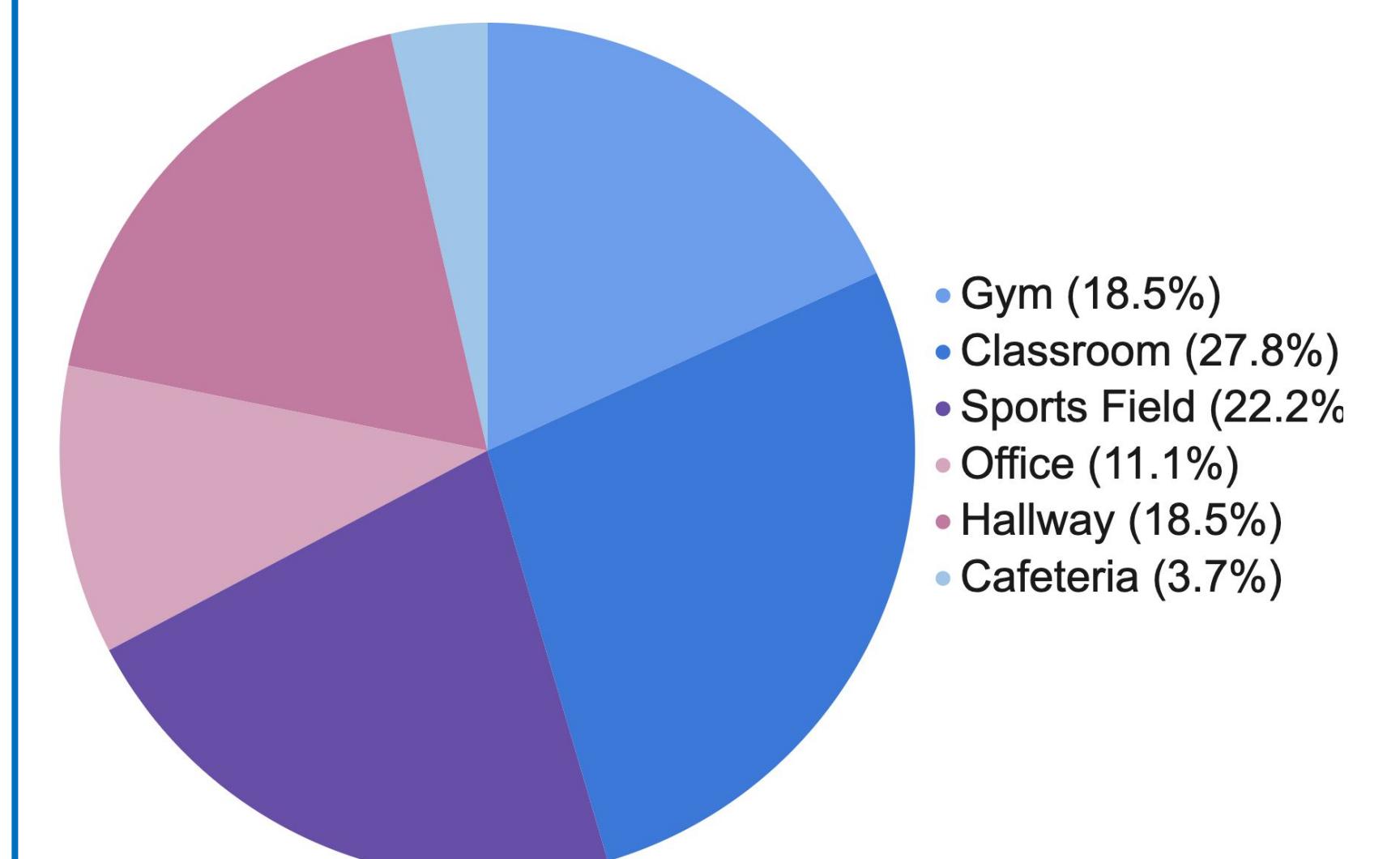
- 99.3% of responding schools reported having an AED
- 12.8% had sudden cardiac arrest emergencies that required AED utilization
- When an AED was used, the patient was resuscitated with no long term neurological outcomes 78.8% of the time
- The plurality of reported OHSCA occurred in a classroom setting (27.8%)
- The percentage of positive patient outcomes in NJ schools was significantly higher than the national average on OHSCAs with excellent neurological outcomes

# TABLES & FIGURES

# Figure 1. AED Utilization Outcome

<b><i>Patient was resuscitated on school campus with no long term neurological complications</i></b>	78.8% (41)
<b><i>Patient was resuscitated on school campus but has long term neurological complications</i></b>	1.9% (1)
<b><i>Patient was not resuscitated</i></b>	19.2% (10)

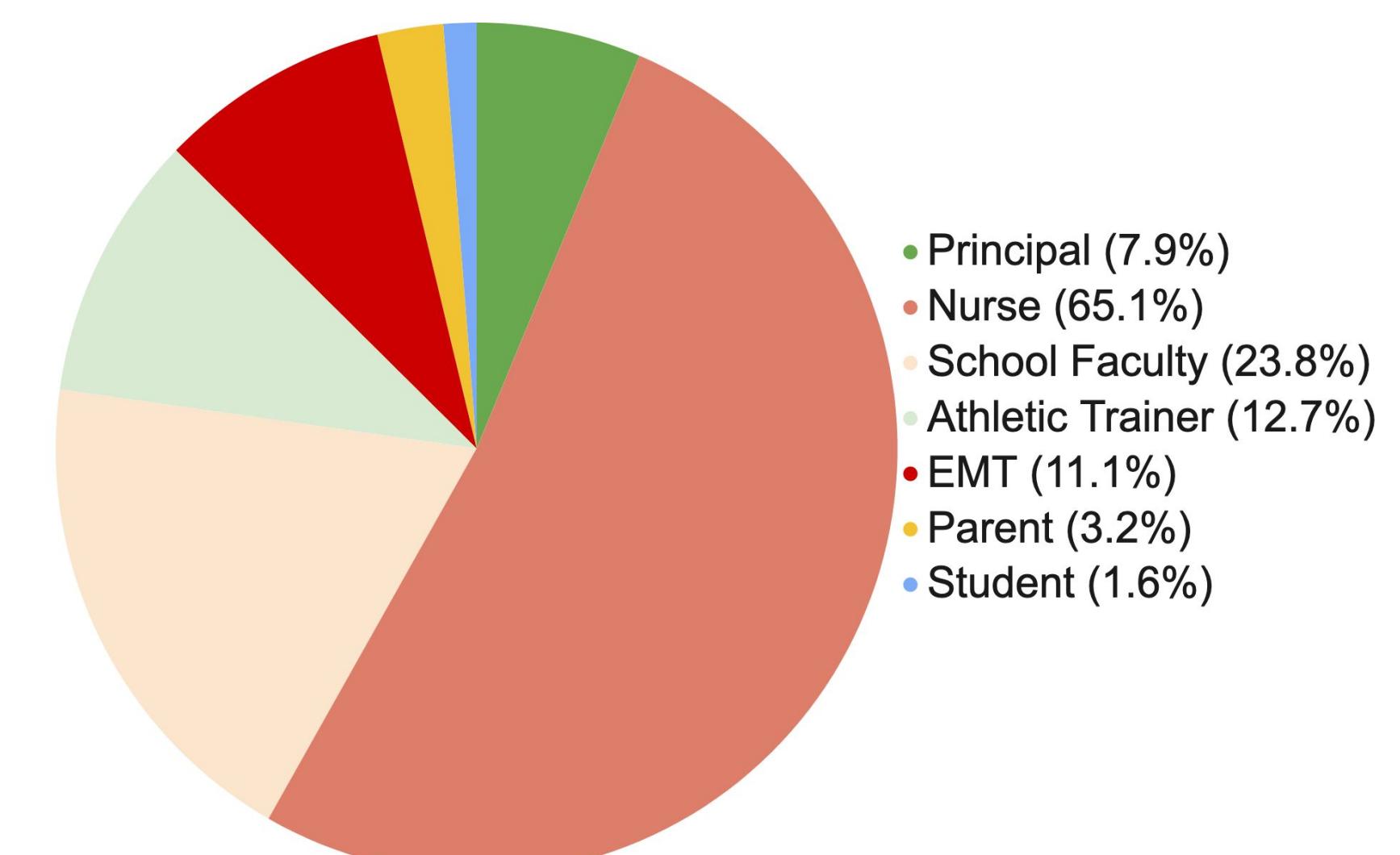
## Figure 3. Location of AED Use



## Figure 2. Survey Respondents' Comments



# Figure 4. Administration of AED



# DISCUSSION

- Successful AED use in our survey was well above previously published rates of about 30% (1), potentially due to personnel training and established emergency action plans
- Despite Janet's law being an unfunded mandate, near complete compliance

# CONCLUSION

- NJ Public and Private schools have complied with Janet's Law
- The survival rate of OHSCA in NJ schools is higher than earlier pediatric reports, and comparable to studies with AED accessibility
- AED accessibility in settings beyond the gym and sports field is vital
- Early AED and CPR implementation greatly improve survival in pediatric OHSCA in school settings
- Ongoing advocacy and legislation is needed to improve OHSCA in children

## REFERENCES

1. Delhomme C, Njeim M, Varlet E, et al. Automated external defibrillator use in out-of-hospital cardiac arrest: Current limitations and solutions. *Arch Cardiovasc Dis.* 2019;112(3):217-222. doi:10.1016/j.acvd.2018.11.001
2. Bak MAR, Blom MT, Koster RW, Ploem MC. Resuscitation with an AED: putting the data to use. *Neth Heart J.* 2021;29(4):179-185. doi:10.1007/s12471-020-01504-z