



Resuscitation Academy (RA) 10-Step Implementations in the PAROS Group

Resuscitation Academy Model to Improve Community Survival Rates

10 Programs & 10 Actions to operationalize scientific understanding



PROGRAMS

- Cardiac arrest registry
- Telephone CPR
- High Performance EMS CPR
- Rapid Dispatch
- Measurement of professional rescuer resuscitation
- AED program for first responders
- Smart technologies for CPR & AED
- Mandatory CPR-AED Training
- Hospital care
- Culture of Excellence

**Improve
Cardiac Arrest
Survival**

ACTIONS

- Form a team
- Select program(s)
- Plan an implementation strategy
- Set specific goals
- Achieve buy-in
- Establish standards
- Pilot the program
- Consult experts
- Communicate progress
- Support, advocate, and celebrate



Project Title:

Resuscitation Academy (RA) 10-Step Implementations in the Pan-Asian Resuscitation Outcomes Study (PAROS) group

Hypothesis:

We hypothesize that the implementation of RA's 10-step recommendations for OHCA will increase survival rate in PAROS participating countries.

Grant period:

Laerdal Grant extended - Jan 2023

8 Countries awarded the grant and their choice of RA 10-steps implementation





Status of the grant disbursement to the 8 Countries

-- Total of 4 disbursement half yearly upon satisfactory progress report

Note: Study delayed due to Covid-19

Recipient of funding	Disbursement status
China - Zhejiang Provincial People's Hospital	Pending 3 rd progress report for final grant disbursement
India - GVK Emergency Management and Research Institute	Grant disbursement completed
Vietnam - Bach Mai Hospital	Pending 2nd progress report for 3 rd grant disbursement
Malaysia - College of Emergency Physicians, Academy of Medicine of Malaysia	Pending 3 rd progress report for final grant disbursement
Pakistan - Aga Khan Hospital	Grant disbursement completed
Philippines - Southern Philippines Medical Center	Grant disbursement completed
Indonesia - Faculty of Medicine, Universitas Brawijaya	Pending 1st progress report for 2nd grant disbursement
Thailand - Narenthorn EMS Center, Rajavithi Hospital	1 st disbursement in Jan 2021



Thank You



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ZHEJIANG PROVINCIAL PEOPLE'S HOSPITAL
杭州医学院附属人民医院
PEOPLE'S HOSPITAL OF HANGZHOU MEDICAL COLLEGE

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Update of RA 10 steps in the pandemic period, Zhejiang, China

Zhou Sheng Ang
2022.05.21

1. Establish a cardiac arrest registry

A total of 543 OHCA cases were collected during the epidemic period due to January 2020 from 37 hospitals in Zhejiang Province.

		Average Time Cost of EMS arrived at patient side(mm:ss)	<i>p value</i>
Before	2017.9-2019.12	0:32:19	
After	2020.1-2022.4	0:36:15	
			0.14 ($p>0.05$)

2.BEGIN Telephone-CPR WITH ONGOING TRAINING AND QUALITY IMPROVEMENT (QI)

- Telephone-CPR is required as a work norm in most of dispatch centers.
- The communication mode of T-CPR instruction is mainly voice telephone instruction, as video telephone instruction doesn't seem realistic at present.
- Dispatchers are trained but there is no uniform training model.

3.BEGIN HIGH-PERFORMANCE EMS CPR WITH ONGOING TRAINING AND QI

- Ongoing training and quality improvement program for responders in EMS. (e.g Training hold by Zhejiang EMS Command Center yearly)
- However , there is no effective and operable quality control and supervision mechanism in practice. (visual record might be considered)



4. Rapid dispatch

- A pre-hospital emergency unified command platform of Zhejiang Province (B2C by an APP) was established last year and test run this year.



4. Rapid dispatch



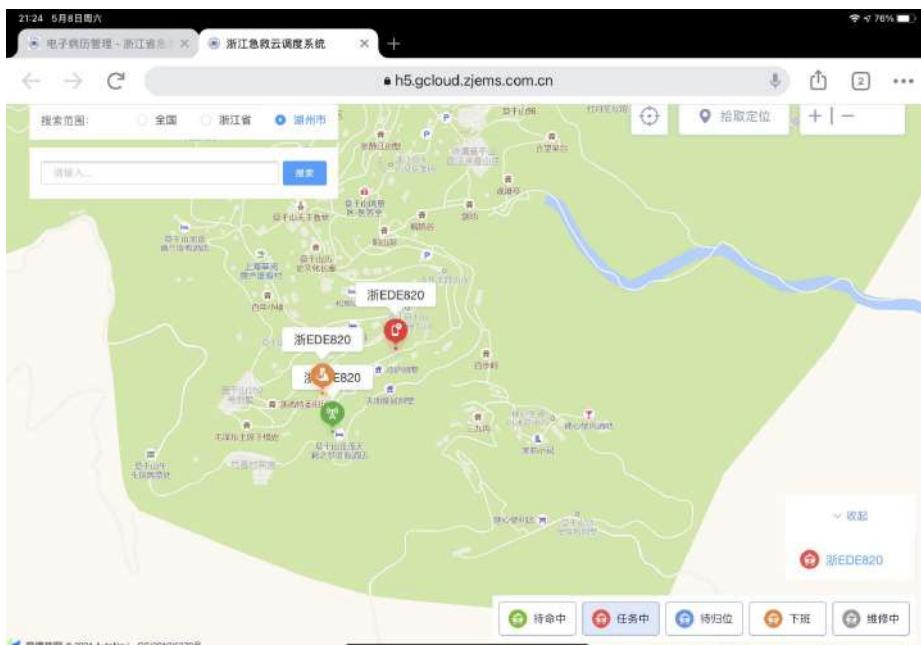
The patient terminal:

- Route of the ambulance.
- Estimated time of arrival.
- Telephone number of the ambulance.
- Communicate with your ambulance timely.

4. Rapid dispatch

The dispatcher terminal:

- More accurate patient's position
- Faster dispatch
- QI



4.Rapid dispatch



The ambulance terminal:

- Easy search
- Easy record (time, medical record..)
- Easy research (transmission of vital signs...)



4. Rapid dispatch

The hospital terminal:

- Better prepared (transmission of vital signs and medical history)
- Better communicate with ambulance



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5. Measure professional resuscitation using the defibrillator recording

That promotion of pre-hospital emergency unified command platform of Zhejiang Province and improvement of record device, make professional resuscitation using the defibrillator recording operable.

6. Use smart technologies, such as smart phone applications, to notify volunteer bystanders who can respond to nearby arrest to provide early CPR and defibrillation

- The pre-hospital emergency unified command platform of Zhejiang Province have the distribution location of all registered AEDs.
- working on an app to alert volunteer first responders to help patients who are about to go into cardiac arrest, and to determine the location of the nearest AED.

7.AED program for first responder, including police officer, security personnel,etc

- CREM (China Rescue Emergency Medicine) course trained nearly 100 firemen and rescuer.



8. Make CPR and AED training mandatory in schools and the community

- Conduct CPR and AED training in communities and schools, making first aid a compulsory course for social personnel Monthly or every other month.



9. Work toward accountability – submit annual reports to the community

- Till now, EMS annual report about OHCA is still incomplete and fragmentary.
We hope the information platform will play a role after formally operated.

10. Work towards a culture of excellence

- Co-authored and published the expert Consensus on CPR for OHCA during COVID-19 in 2021.

• 236 •

实用休克杂志(中英文) 2021年8月第5卷第4期 Journal of Practical Shock, Aug 2021, Vol 5, No 4

• 指南与解读 •

新型冠状病毒肺炎心脏骤停预防与心肺复苏专家共识

新型冠状病毒肺炎心脏骤停预防与心肺复苏专家共识工作小组

【摘要】 在新型冠状病毒肺炎（COVID-19）死亡患者中，其心脏骤停原因及其心肺复苏策略与传统的、心源性心脏骤停心肺复苏有明显差异性，这些差异性主要体现在COVID-19特点、心脏骤停原因、个人防护、复苏策略与复苏伦理等方面。因此，需要有涉及新型冠状病毒肺炎患者心脏骤停预防与心肺复苏专家共识，以指导这一特殊情况下的心肺复苏实践。共识制定小组由45位专家组成，涉及急诊医学、重症医学、传染病学、医院感染控制、循证医学、呼吸与危重症医学、医院管理学、伦理学等专业专家。应用多种检索工具如PubMed，以COVID-19/新型冠状病毒肺炎、心肺复苏、院内感染、个人防护装备等关键词，以中文与英文两种语言进行文献检索，获得93篇引用文献；依据临床指南编制GRADE共识意见，确定本共识循证证据级别与推荐等级；通过文献分析与证据分级审核，通过提出32项新型冠状病毒肺炎心脏骤停预防与心肺复苏策略相关问题清单，并制定相应的推荐意见草案。共识制定工作小组最后确认28项推荐意见，推荐意见主要涉及三方面内容：①新型冠状病毒肺炎心脏骤停预防与预警；②心肺复苏人员个人防护；③新型冠状病毒肺炎心肺复苏策略。

【关键词】 新型冠状病毒；COVID-19；心脏骤停；心肺复苏；院内感染；个人防护装备

在抗击新冠肺炎的战场上，医护人员“舍生忘死”；在疫情防控阻击战中，“逆行者”们“最美逆行”。他们

- Online train for EMS personnel

 浙江省院前医疗急救 网上培训考核系统
ZHEJIANG PROVINCIAL PRE-HOSPITAL MEDICAL EMERGENCY ONLINE TRAIN

账号登录

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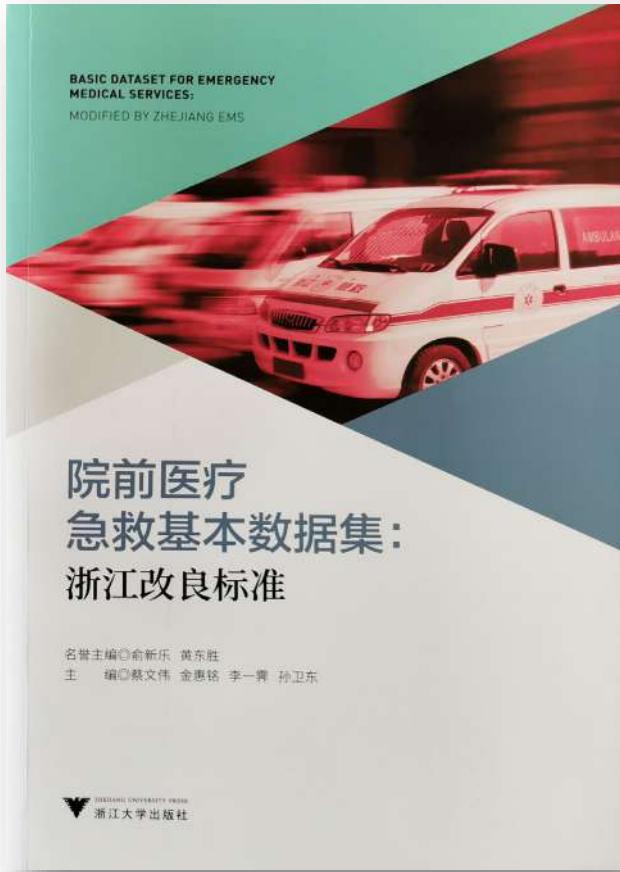
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► new 浙江省院前医疗急救培训教材（下册，非创伤急救）
► new 浙江省院前医疗急救培训教材（中册，创伤急救）
► new 浙江省院前医疗急救培训教材（上册，急救管理）



- Publishing books EMS related



谢谢聆听

THANK YOU FOR YOUR ATTENTION



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Thai OHCA Registry

The update 2022



Current status of Thai OHCA registry

- 10 currently participating hospitals with PAROS IDs
- 4 hospitals have entered data successfully.
- 6 hospitals haven't entered data through PAROS.

Hospital	Hospital
Rajavithi hospital	Nakornping hospital
Siriraj hospital	Ramathibodi hospital
Maharaj Nakorn Chiang Mai hospital	Queen Savang Vadhana Memorial hospital (Somdej Si Racha)
Vajira hospital	Prachomkla hospital
	Police general hospital
	Nopparatrajathanee hospital



**Clinical paper**

**A retrospective multi-centre cohort study:
Pre-hospital survival factors of out-of-hospital
cardiac arrest (OHCA) patients in Thailand**



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Abstract

Objective: This study aimed to explore significant pre-hospital factors affecting the survivability of Out-of-Hospital Cardiac Arrest (OHCA) patients in countries with developing EMS systems.

Method: A retrospective cohort study was conducted examining data from January 1, 2017 to December 31, 2020 from Utstein Registry databases in Thailand, collected through Pan-Asian Resuscitation Outcomes Study (PAROS). Data were collected from three centres, including regional, suburban-capital, and urban-capital hospitals. The primary endpoint of this study was 30-day survival or discharged alive after an OHCA event. The multivariable risk regression was done by modified Poisson regression with robust error variance to explore the association between 30-day survival and pre-hospital factors with potential confounders adjustments.

Findings: Of 1,240 OHCA cases transferred by Emergency Medical Services (EMS), 42 patients (3.4%) were discharged alive after 30 days, including 22 (8.6%), 8 (3.0%), and 12 (1.7%) from regional, suburban-capital, and urban-capital centres, respectively. The initial arrest rhythm was 89.7% unshockable, with no significant variations across the three centres. Overall, bystander Cardiopulmonary Resuscitation (CPR) was 40.4%. However, bystander CPR with Automated External Defibrillator (AED) application was 0.8%. Bystander CPR significantly increased 30-day survival probability ($aRR\ 1.88,\ 95\% CI\ 1.01\ to\ 3.51;\ p\ 0.049$). Additionally, reducing the EMS response time by one minute significantly increased OHCA survivability ($aRR\ 1.12,\ 95\% CI\ 1.04\ to\ 1.20;\ p\ 0.001$).

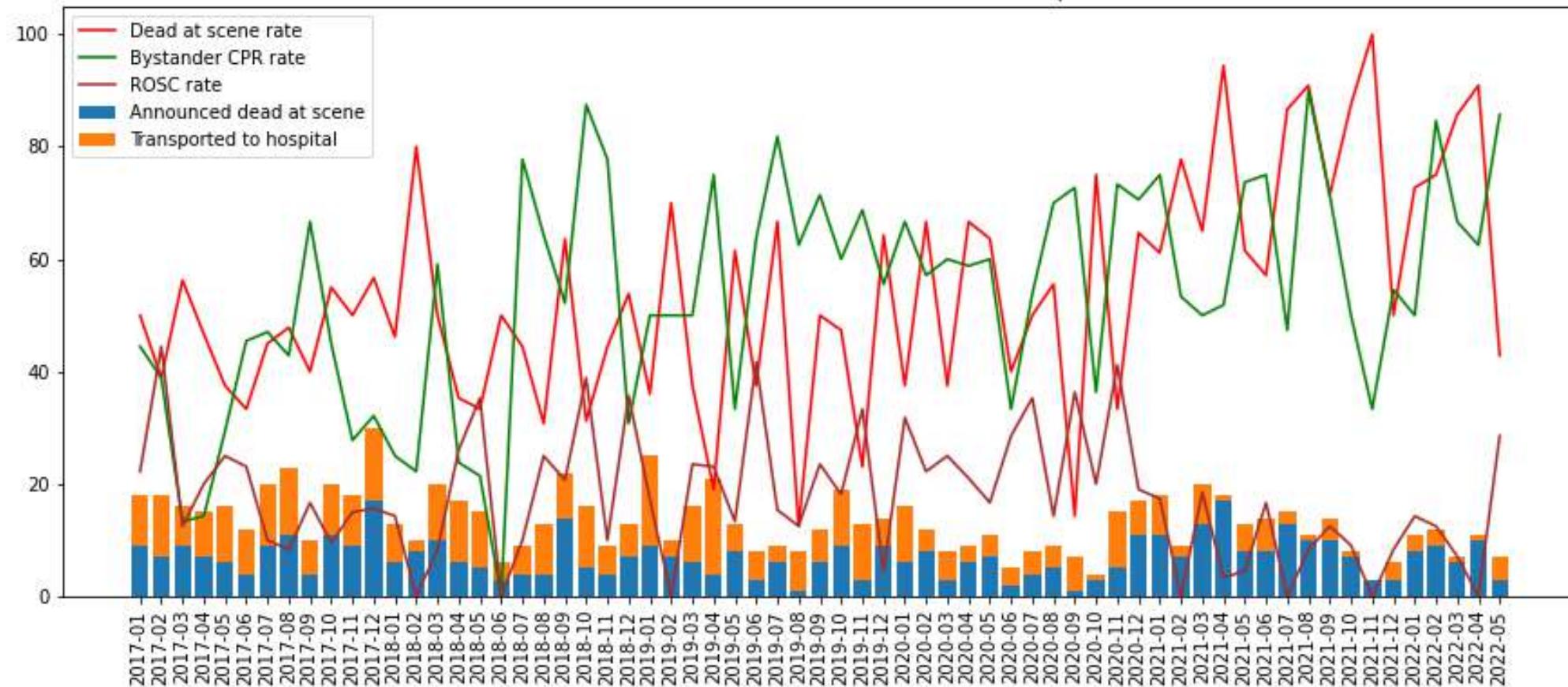
Conclusions: Response time and bystander CPR are the factors that improve the 30-day survival outcomes of OHCA patients. In contrast, scene time, transport time, and pre-hospital advanced airway management didn't improve 30-day OHCA survival.

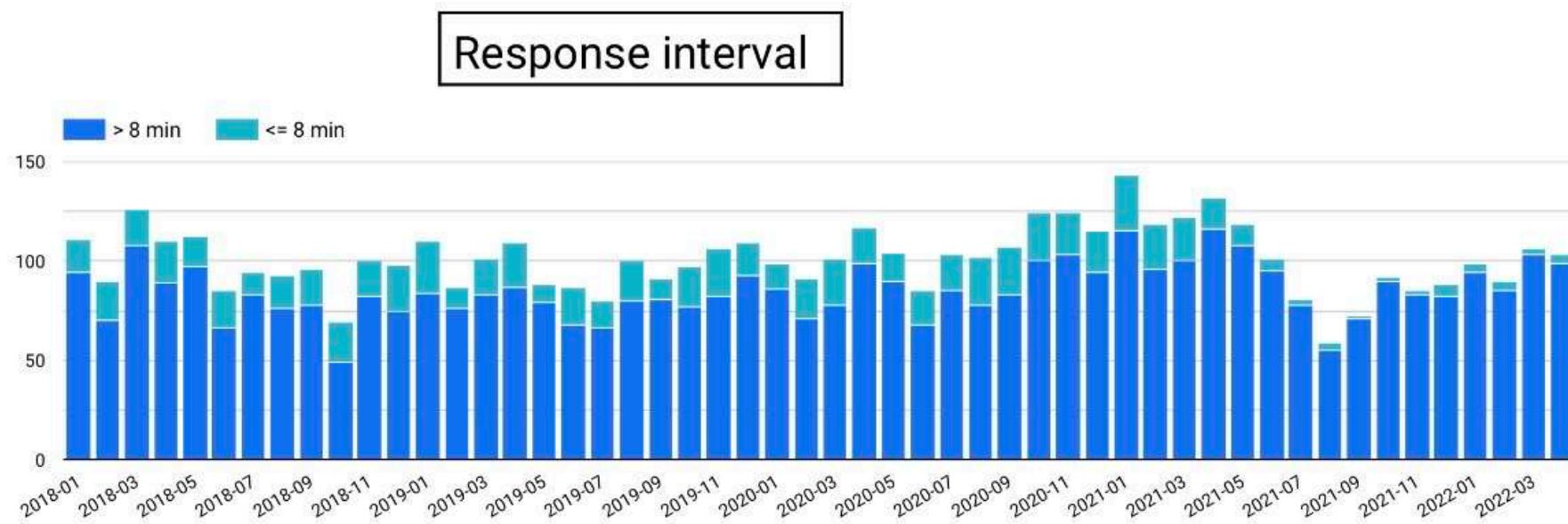
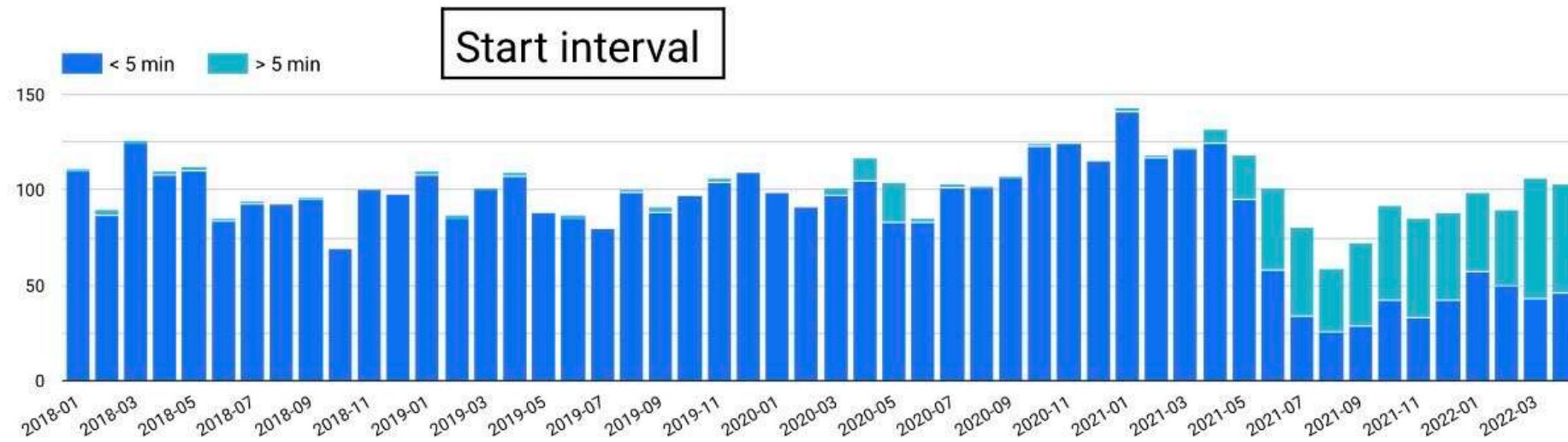
Keywords: Out-of-hospital cardiac arrest, Response time, Bystander CPR, Cardiac arrest, Response time interval, Cardiopulmonary resuscitation

- 1,240 OHCA cases transferred by Emergency Medical Services
- 3.4% (42 patients) were discharged alive after 30 days
- 89.7% unshockable
- 40.4% bystander CPR
- **0.8% bystander CPR with Automated External Defibrillator (AED)**

- **Bystander CPR** significantly increased 30-day survival probability ($aRR\ 1.88,\ 95\% CI\ 1.01\ to\ 3.51;\ p\ 0.049$).
- **reducing the EMS response time** by one minute significantly increased OHCA survivability ($aRR\ 1.12,\ 95\% CI\ 1.04\ to\ 1.20;\ p\ 0.001$).
- **Conclusions:** Response time and bystander CPR are the factors that improve the 30-day survival outcomes of OHCA patients. In contrast, scene time, transport time, and pre-hospital advanced airway management didn't improve 30-day OHCA survival.

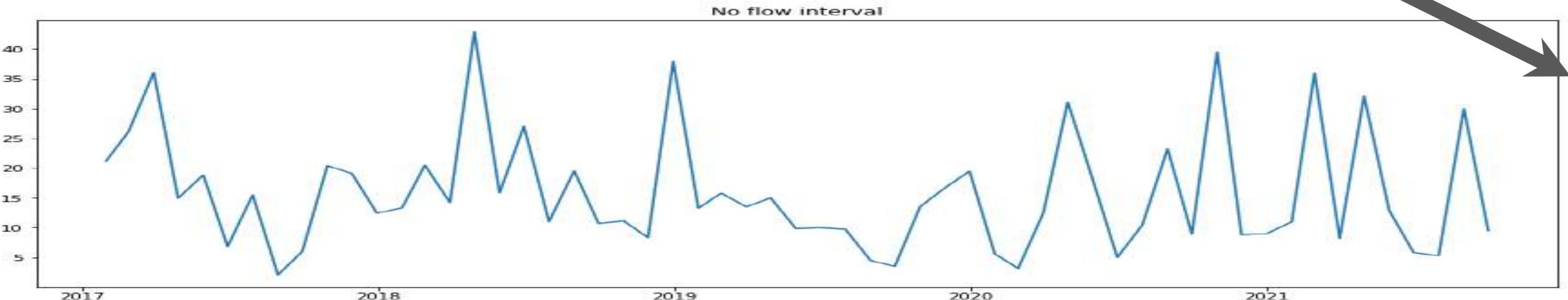
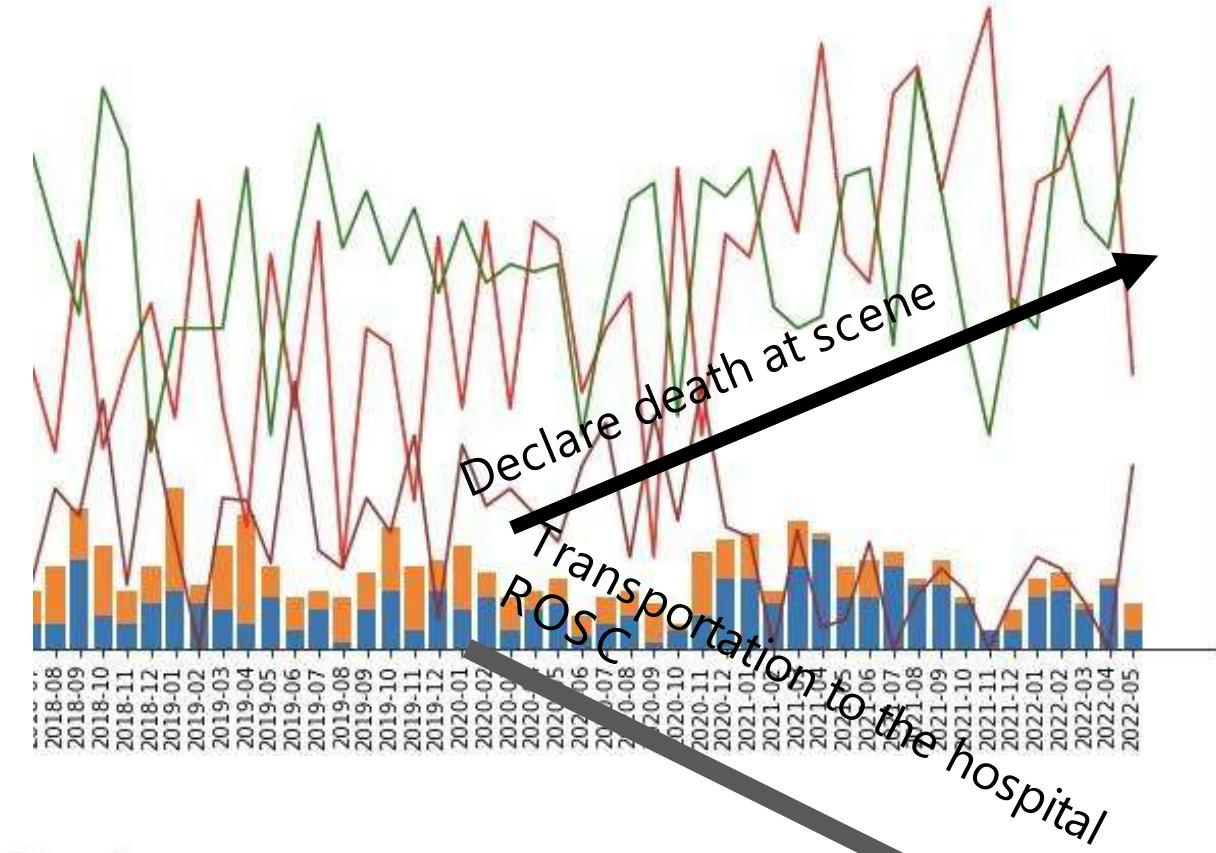
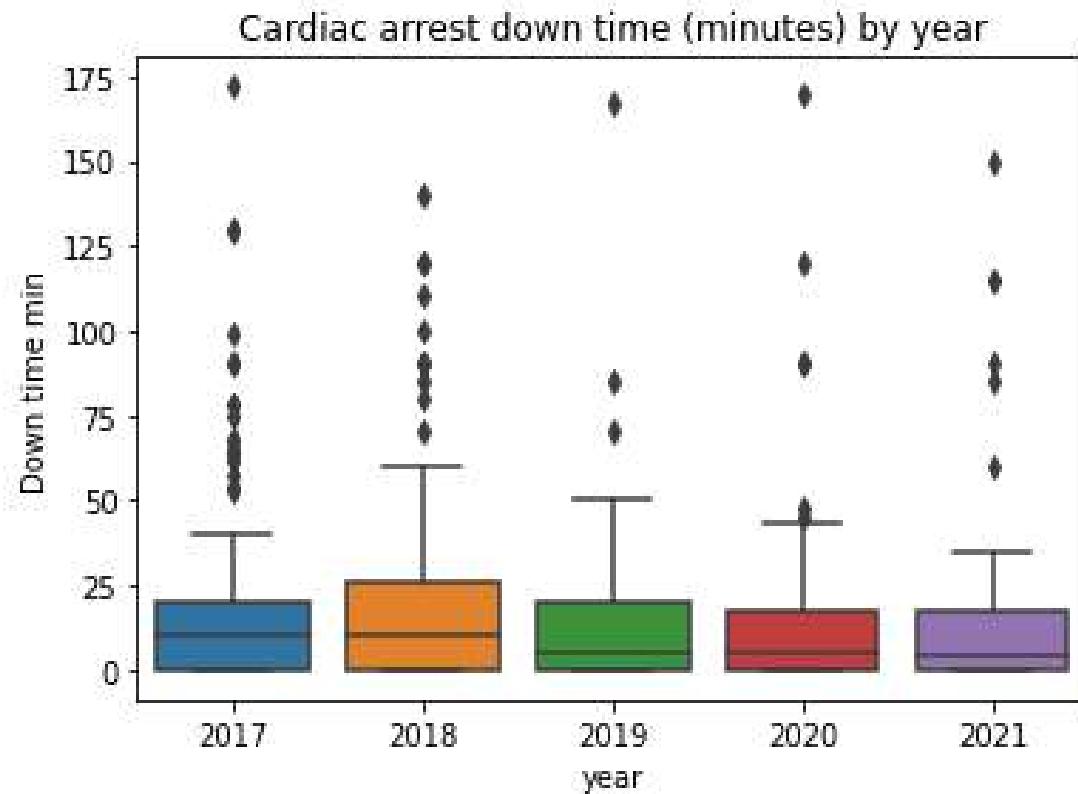
Narenthorn EMS CPR outcome 2017-2021 (Sep)





During Covid-19 pandemics

Narenthorn EMS CPR outcome 2017-2021 (Sep)



Out of hospital cardiac arrest (OHCA) data set

- Utstein template for cardiac arrest patient

ข้อมูลผู้ป่วย Incident * Prehospital * ED *

ข้อมูล Dispatch * Prehospital CPR * Prel

CPR initiated by

- None -
- None -
- Bystander - Family
- Bystander - Layperson
- Bystander - Healthcare provider
- First responder
- Ambulance crew

Date

Witnessed/Non-witnessed cardiac arrest
Estimated time of arrest
Time of first chest compression
Bystander CPR
ROSC
EMS outcome
Hospital outcome

Location type *

- Select a value -

Witnessed by *

- Select a value -

- Select a value -

Not witnessed

Bystander - Family

Bystander - Layperson

Bystander - Healthcare provider

Ambulance

Time AED applied

Date

Time

E.g., 2018-09-03

E.g.,

Initial rhythm

- None -

- None -

VF

VT

PEA

Asystole

Unknown - Shockable

Unknown - Unshockable

Bystander - Layperson

Bystander - Healthcare provider

First responder

Ambulance crew

Thailand 2022 : 10-step Recommendations update



1. Establish cardiac arrest registry

- We have 3 hospital-based EMS systems input the data to the PAROS system.
 - We have a few projects using our cardiac registry to investigate the gap of the system, especially in the COVID-pandemic period.
 - Encourage more hospital or EMS service to Submit Thai OHCA registry

Thailand 2022 : 10-step Recommendations update

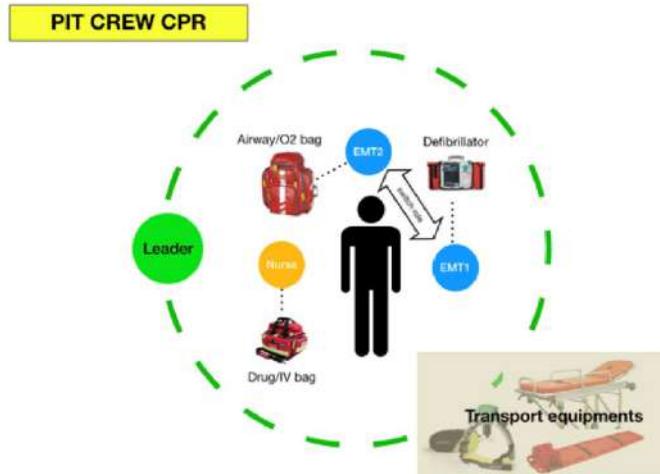
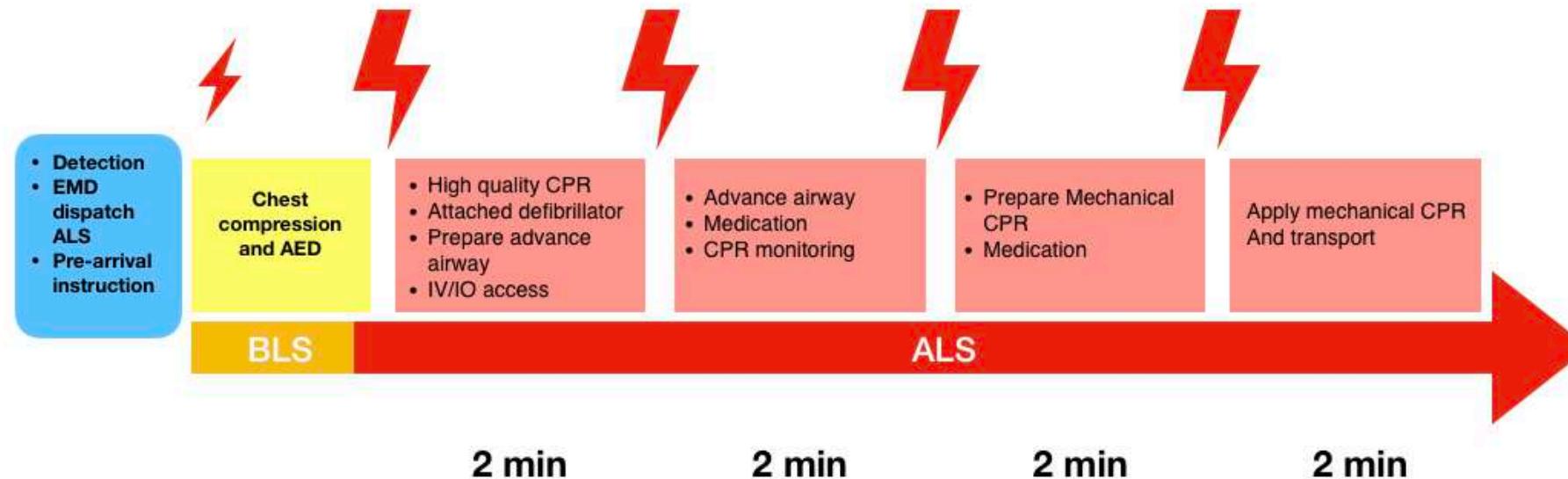
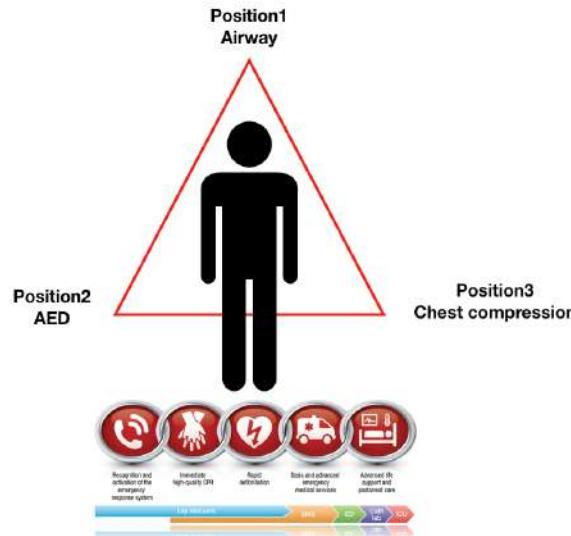
2. Begin telephone-CPR with ongoing training & quality improvement

- Rates of bystander CPR and time to first chest compression during covid-19 pandemic have not changed (~50%, 8 minutes to first compression) of OHCA EMS response
- Rates of ROSC at scene is decreased
- Rates of death at scene declaration is decreased, partially due to limited hospital resources

Thailand 2022 : 10-step Recommendations update

3. Begin high-performance EMS CPR with ongoing training & quality improvement

- In Thailand, many areas have regional EMS protocols as Off-line medical direction including the OHCA protocol.
- Some areas have quality improvement projects to maintain high-performance EMS CPR, especially in the academic hospitals.





Thailand 2022 : 10-step Recommendations update

4. Rapid dispatch

- Delayed EMS ambulance dispatch and response time due to covid-19 disease control and personnel protection measures
- Delayed first responder response time; it might be due to lacking the first responder teams for transportation of COVID patients.

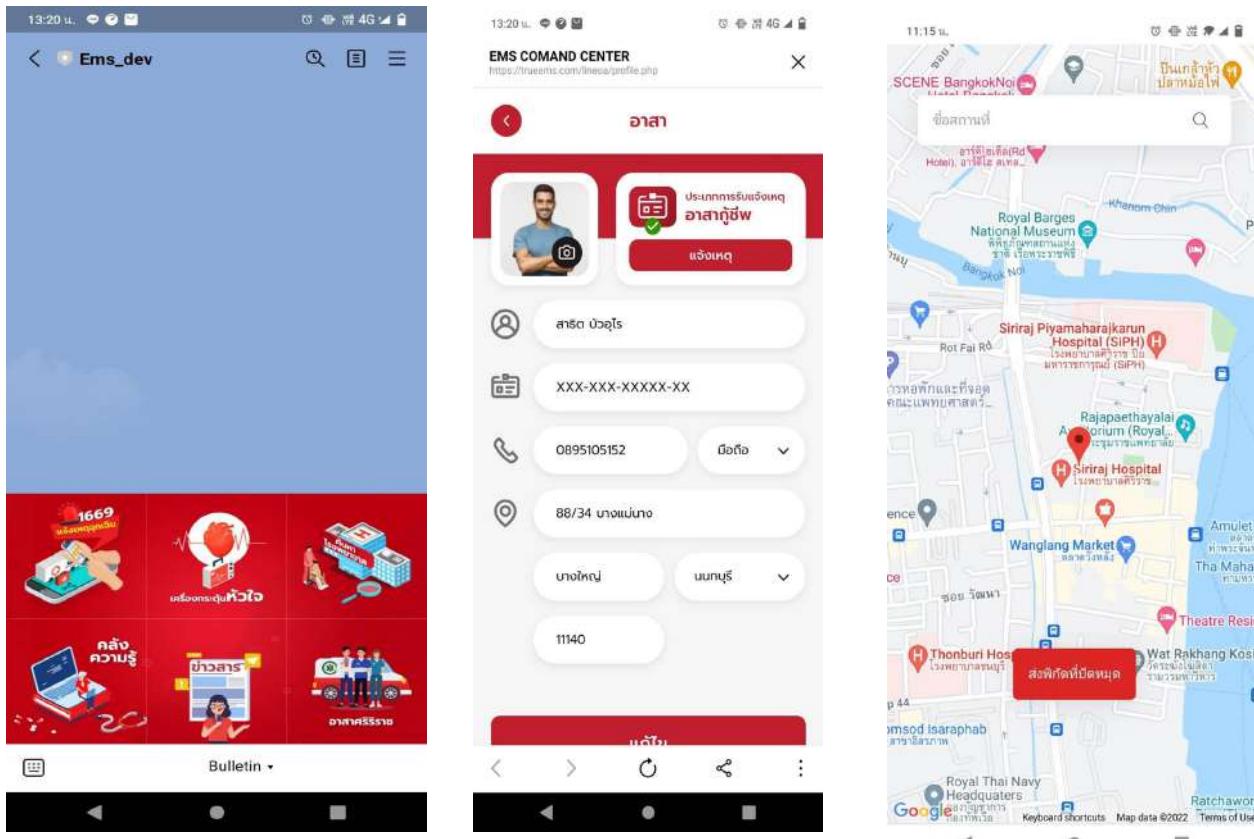
Thailand 2022 : 10-step Recommendations update

5. Measure professional resuscitation using the defibrillator recording

- Some EMS teams measure quality of CPR and feedback to their providers using the defibrillator recording or VDO record from the teleconsult system.

Thailand 2022 : 10-step Recommendations update

6. Use smart technologies



Combined activation system with social media platform (Line official)

By Siriraj EMS Center



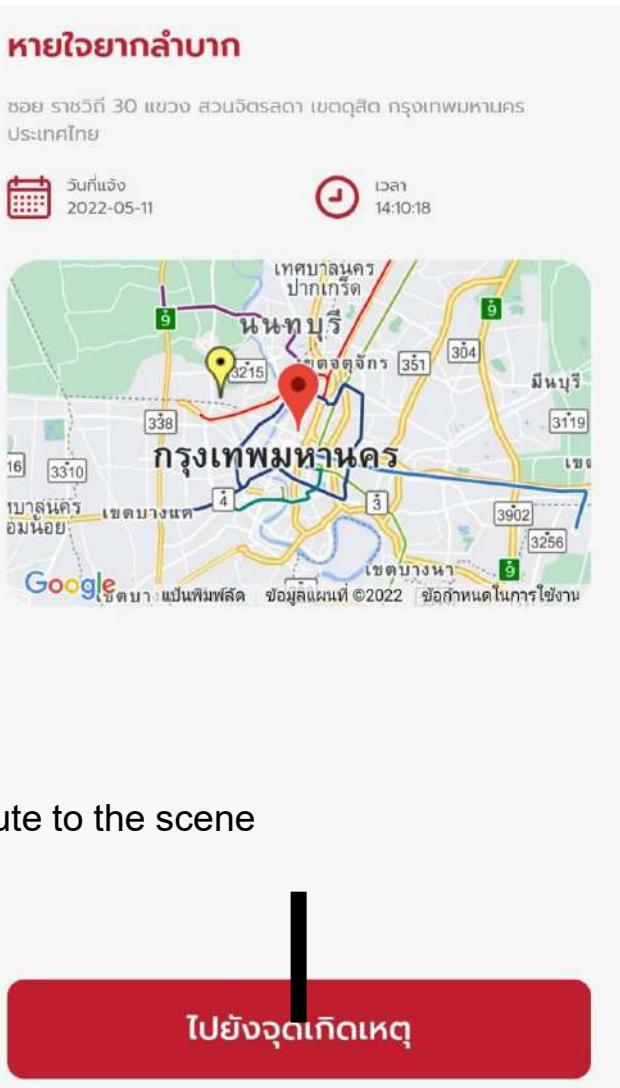


By Siriraj EMS Center

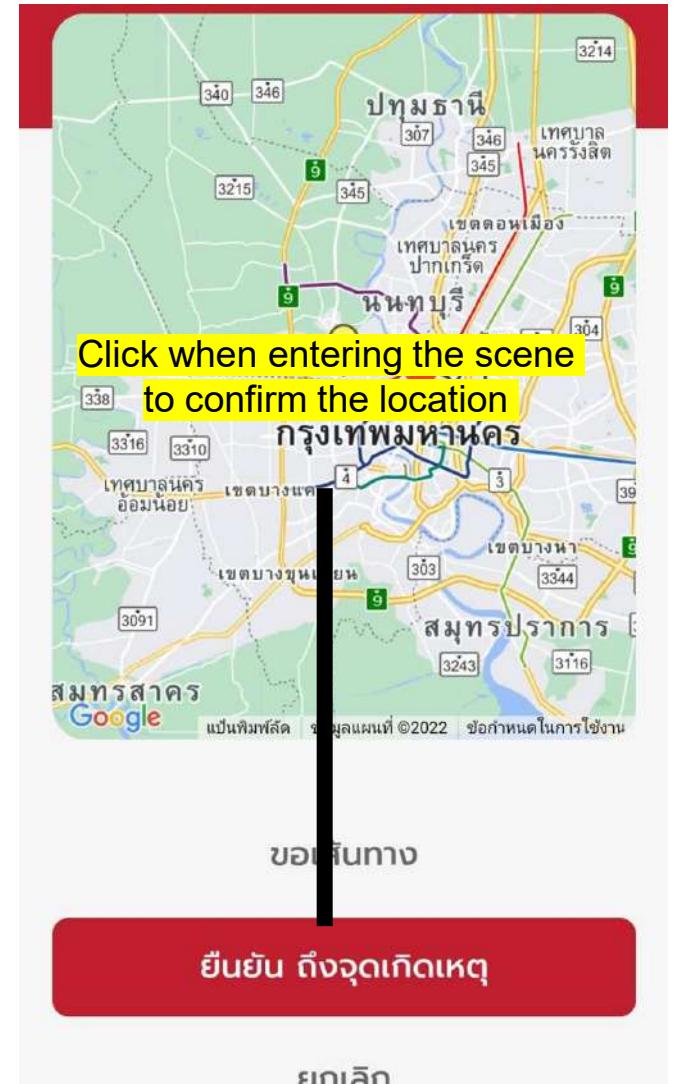
Click for accepting the case



Click for the route to the scene



ไปยังจุดเกิดเหตุ



ขอเป็นกลาง

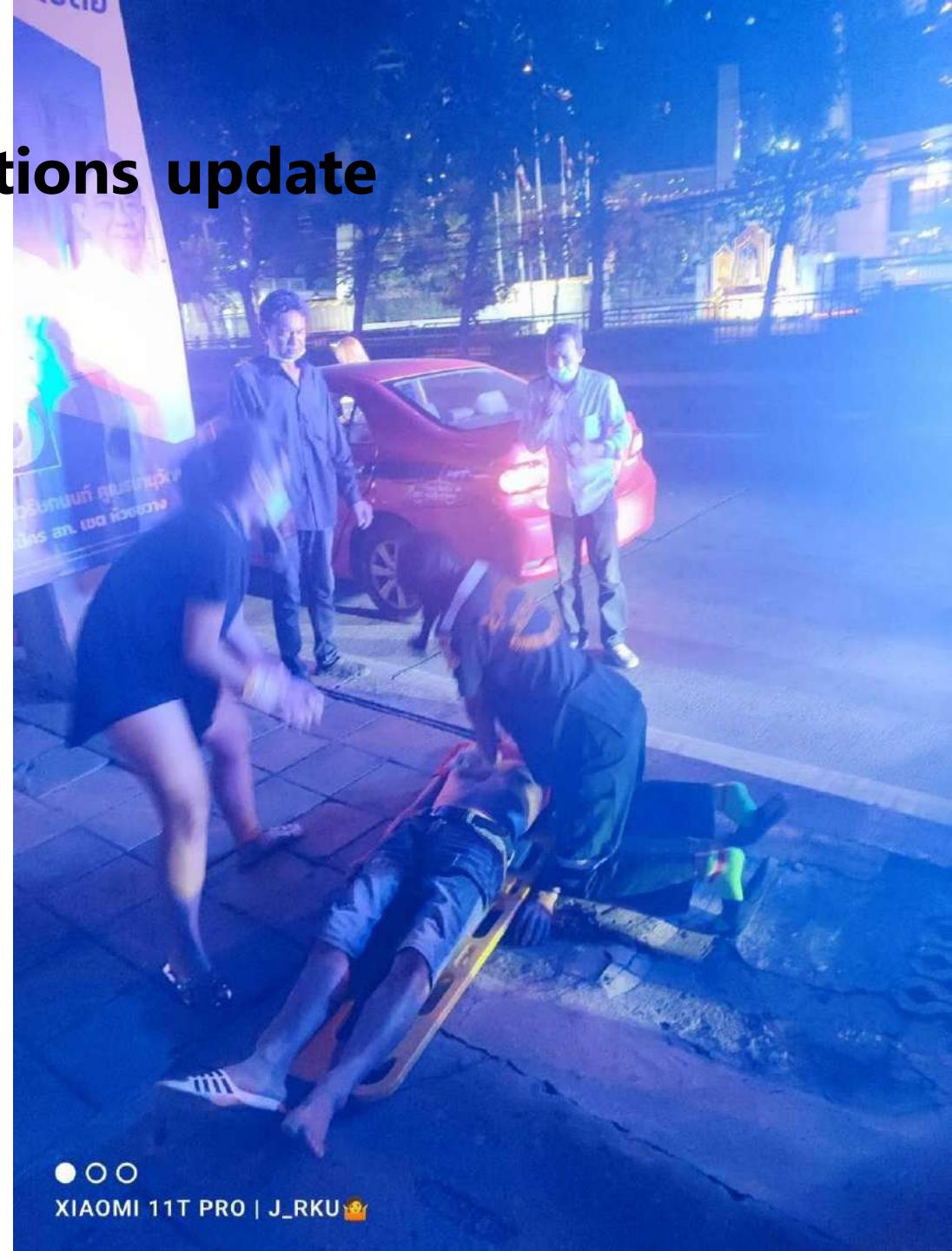
ยืนยัน ถึงจุดเกิดเหตุ

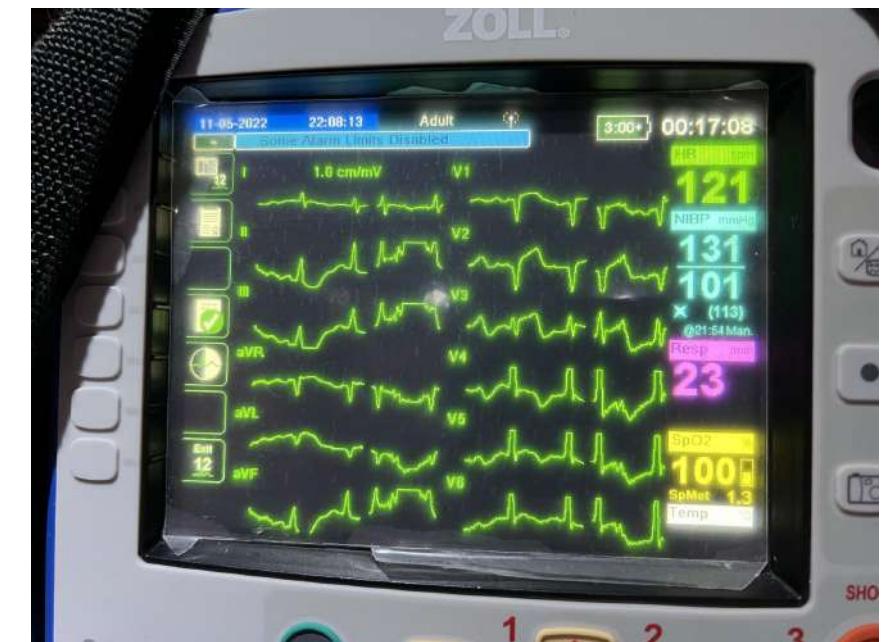
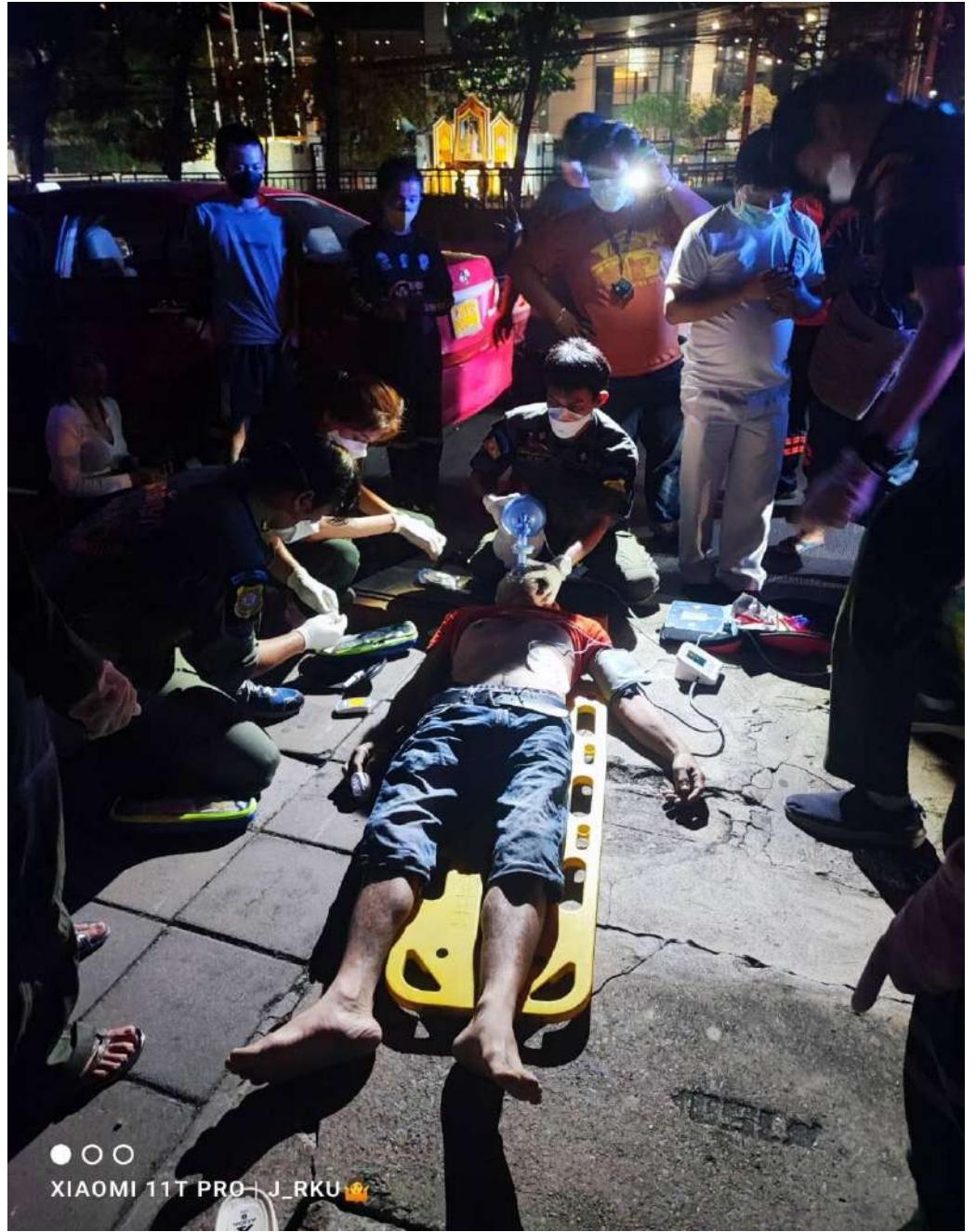
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Thailand 2022 : 10-step Recommendations update

7. AED program for first responders

- First responders are trained to use AED





Thailand 2022 : 10-step Recommendations update

8. Make CPR & AED training mandatory in schools and the community

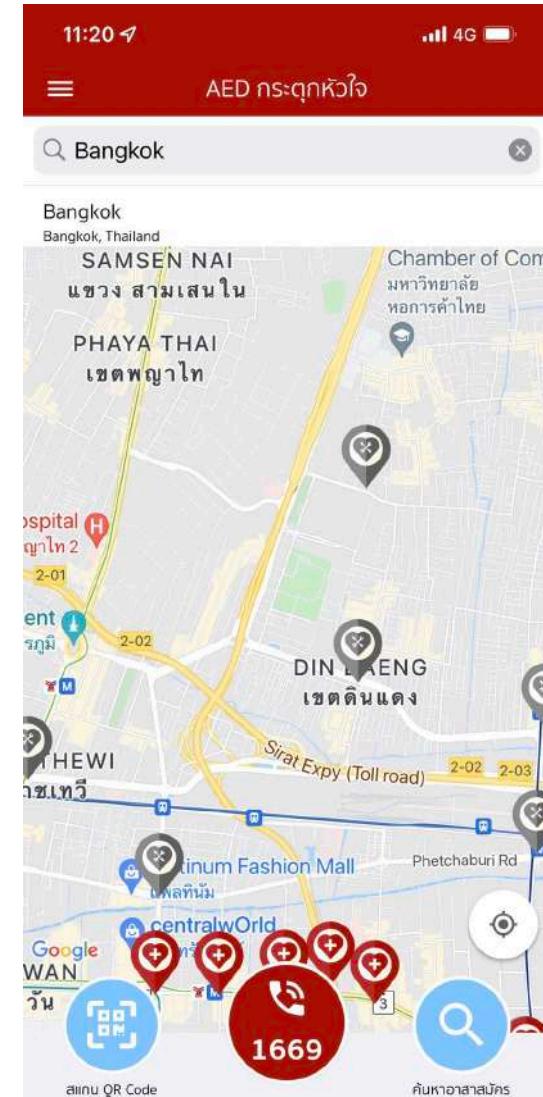
- Integrated AED training into layperson CPR training program



Thailand 2022 : 10-step Recommendations update

9. Improving accessibility of Public-access AED

- A few public AEDs in the area of our responsibilities
- Pilot survey and registry of public access defibrillator in specified area: Nonthaburi
- Collaboration with logistical academic institutes to publish research in optimization of public AED installation
- Reinforcement of mandatory AED installation area in extra-large size public building in National Building Control Act



Thailand 2022 : 10-step Recommendations update

10. Work towards accountability- submit annual reports to the community

- No routines for submitting annual reports to the community
- EMS operation data is available for analysis and summarize
- Plan to make the report publication becomes routine and sustainable

**THANK
YOU!**



**CPR training
in
Trauma Project
(Active Bleeding Control- ABC) in India**

**Dr G V Ramana Rao MD
Director EMLC & Research GVK EMRI**



Introduction

- ④ Trauma is globally recognized as a serious public health problem.
- Out of 12 million deaths worldwide, India accounts for 1.4 million deaths (per year) in road traffic accidents.
Ministry of Road Transport & Highways (MORTH), Government of India, has revealed that in the year 2017, everyday 1274 accidents and 405 deaths or every hour 43 accidents and 17 deaths occur in India. **India – 1 minute 1 RTA; 4 minutes 1 RTA death**
- ▣ 40% of road accident victim die due to haemorrhage/ excessive bleeding before reaching hospital.
- ▲ **Uncontrolled bleeding is the number one cause of preventable death from trauma.**
- ▲ Trained first responder appears to be the weakest and most difficult link in the chain of trauma survival during the golden hour.

Trauma Chain of survival



“YOU are the HELP until help arrives”



Collaborations

- First time in India, Active Bleeding Control (ABC) Project is initiated in 108 GVK EMRI, Hyderabad.
- GVK Emergency Management and Research Institute (GVK EMRI) as lead partner collaborated with
- Pediatric Simulation Training and Research Society, India (Pedi STARS India)
- Children's hospital of Philadelphia (CHOP)
- World Point
- Public Health Foundation of India (PHFI)/IIPH-H
- Transport Department of Telangana
- Police Department of Telangana
- Road Safety Club at Hyderabad (RSCH)

Aim

- To reduce the mortality and morbidity from road accidents by training of bystanders to arrest Active bleeding.

- **Slogan**

“YOU are the HELP until help arrives”

- **Logo**



Creating ABC Volunteers

ABC Volunteer development training

Methodology :- Video based program and practice while watching

Content:

- Personal safety precautions
- Activation of EMS
- Bleeding Identification Control Bleeding techniques with and without ABC Kit
- Control Bleeding with and without ABC Kit

Skill station: Simulation based practice (**Role play**)

- Bleeding control with direct pressure
- Bleeding control with tourniquet
- CPR

ABC Volunteer training



ABC Volunteer training



Easy Learning Tools

ABC Booklet ABC Brochure (Telugu & English)

Active Bleeding Control

Step -1
Scenesafety- protect yourself from danger

Step -2
Call 108

Step -3
Expose the limb at the site of the injury and Look for Active Bleeding
(Example: Spurting out bleeding from the wound, blood pooled on the ground, injury with blood soaked clothing, partially or completely separated limb)

Step -4
If you do not have an Active Bleeding Control (ABC) Kit:
Cover the wound with a clean cloth and apply direct pressure with both hands directly on the wound

- 4A. Cover the wound with a clean cloth
- 4B. Apply pressure with both hands directly on the wound
- 4C. Continue the pressure to stop the bleeding until ambulance personnel comes

Step -5
If you have an Active Bleeding Control (ABC) Kit:

- 5A. Wear gloves and mask
- 5B. Apply direct pressure using dressing pads at the site of bleeding
- 5C. If still bleeding add one more dressing pad without removing first dressing pad
- 5D. Roll the bandage over the dressing pad using adequate pressure

Step -6
If the bleeding continues in spite of the pressure bandage, apply the tourniquet

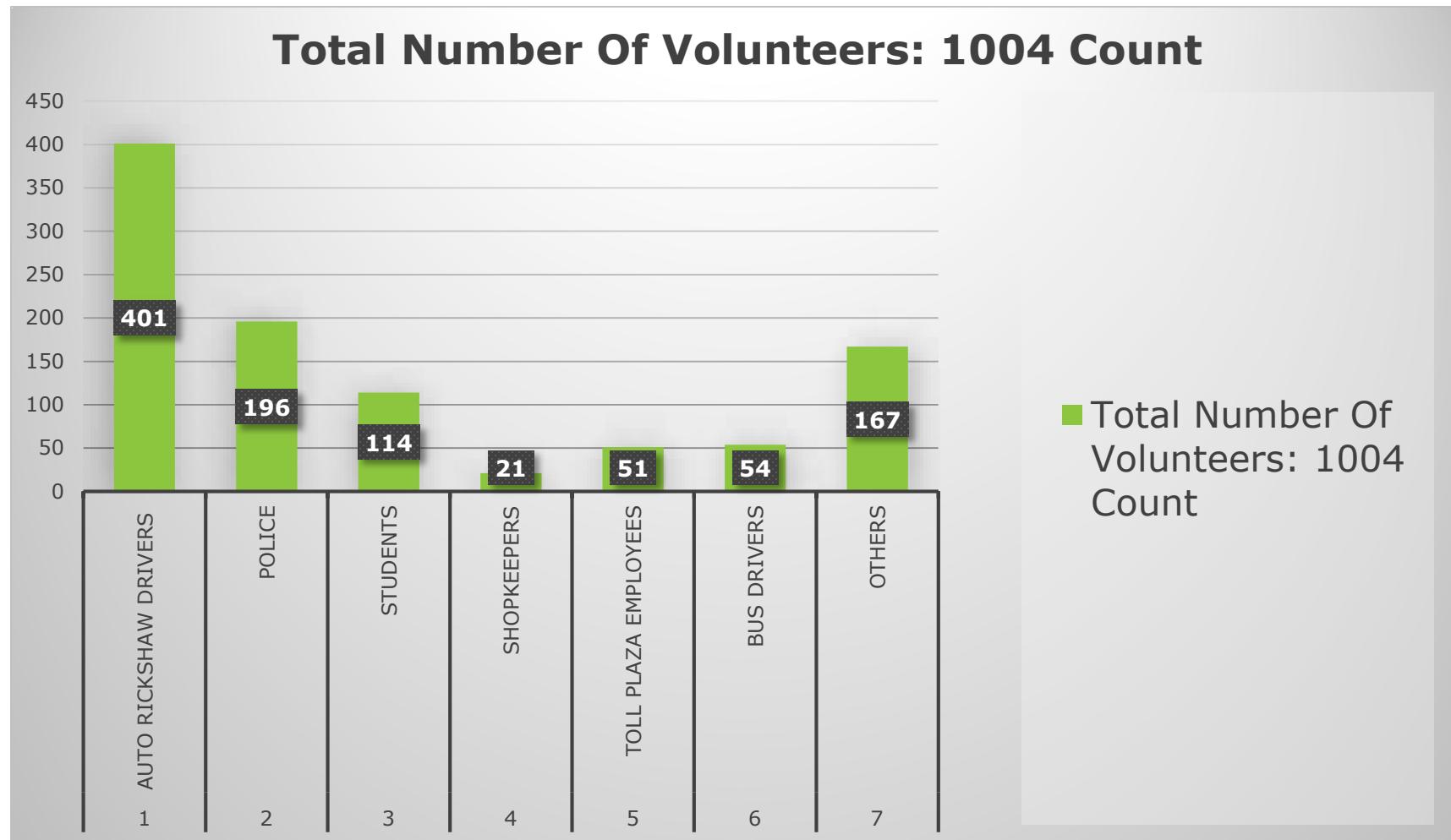
- 6A. Apply the tourniquet around the bleeding arm or leg about 2 to 3 inches above the bleeding site (please DO NOT place the tourniquet onto a joint).
- 6B. Pull the tourniquet to make it as tight as possible
- 6C. Twist the wooden stick until bleeding stops
- 6D. Secure the wooden stick to keep the tourniquet tight
- 6E. Note and write down the time of tourniquet application.

Thank you for your contribution to save a life, please do provide necessary information about this incident to the concern team.



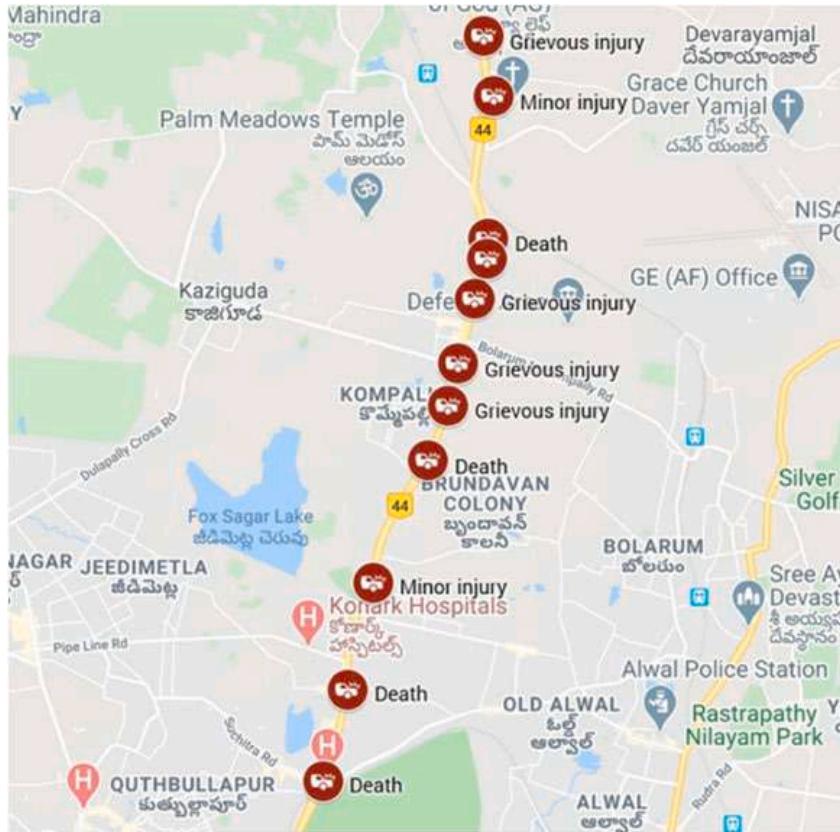
ABC KIT

ABC Volunteer Distribution



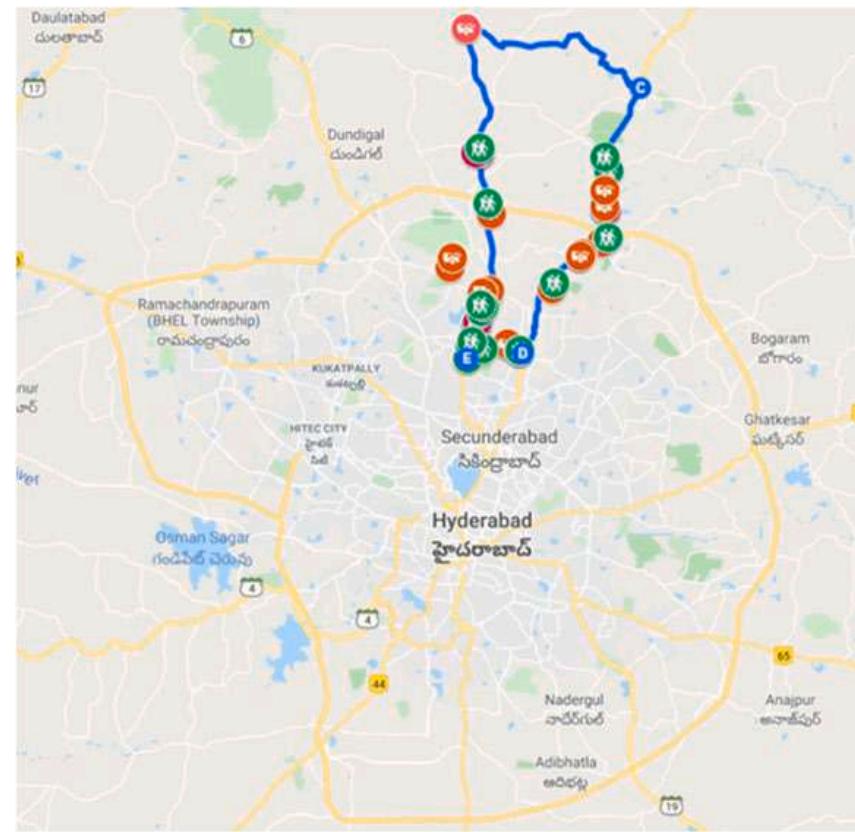
Study Area

Black spots(RTA deaths)



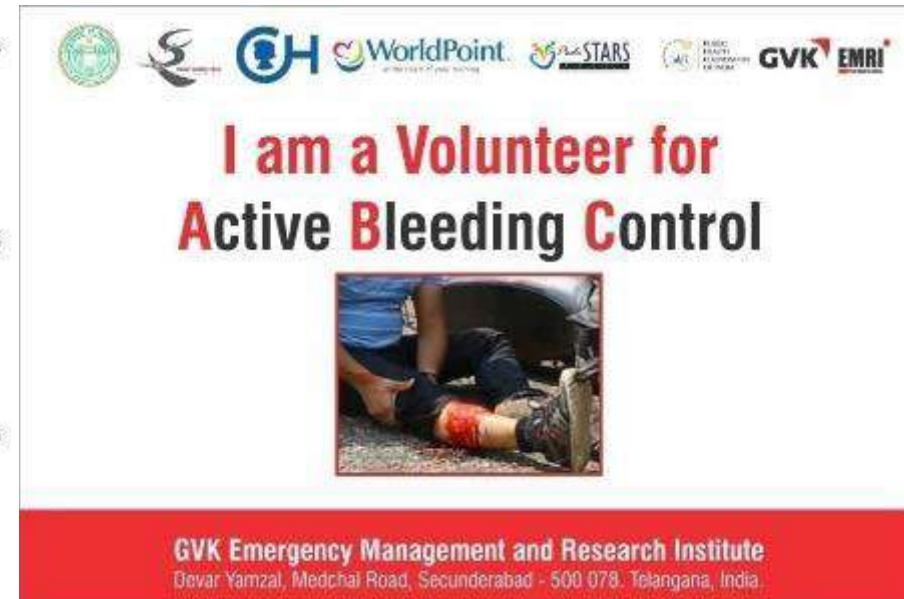
1 National Highway

1 State Highway



Recognition

ABC Volunteer ID card ABC Volunteer Sticker



Auto Rikshaw drivers with ABC Volunteer sticker on their vehicles





ABC Volunteers in Action



Public access to ABC kits

ABC Volunteers in COVID 19 – ABC kits and masks/ sanitizers



**ABC and CPR training for National Highway
Patrolling team from Cyberabad Commissionerate**



EMS- Road Safety slogan (Good Samaritan/ Police)



Stop to help



Call to help



Assess the case



Start the heart



Stop the bleed

Clinical Epidemiology and Global Health 11 (2021) 100729



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Clinical Epidemiology and Global Health

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Original article

Active bleeding control pilot program in India: Simulation training of the community to stop the bleed and save lives from Road Traffic Injuries



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ROAD SAFETY TELANGANA STATE <info.roadsafety.ts@gmail.com> ranarao_gr@emri.in; sandeep.shandilya@adg.railways.gov.in
You replied to this message on 10-03-2022 16:28.
We removed extra line breaks from this message.

One full dayTraining Regarding "Accident first Responder Course"

Dear Sir,

We want to organize a one day hands on certification on "Accident first Responder Course" to all our 350 highway mobile staff through EMRI. Tentatively we will have a class of 50 personnel for one full day training program of 7 hours. Please let us know your terms and conditions.

We will like your training team to impart training on 16th, 22nd, 24th, 26th, 29th, 31st March and 7th April. Any suggestions regarding the class strength pl.

With best Wishes.

Yours Sincerely
Sandeep Shandilya IPS
ADG RAILWAYS AND ROAD SAFETY



Chief Secretary Government of Telangana- conducting a review meeting on road safety in the State in Hyderabad on Saturday. -Special Correspondent-HYDERABAD DECEMBER 19, 2020 20:16 DECEMBER 19, 2020

Summary

- CPR with ABC is considered as a priority “ Felt Need” than CPR alone.