

# Building a safer community by promoting bystander CPR

Fire Asia 2018



Dr LP Leung  
Emergency Medicine Unit  
Li Ka Shing Faculty of Medicine

# Promoting bystander CPR

- WHY is it necessary?
- HOW to implement?
- WHAT has been done?



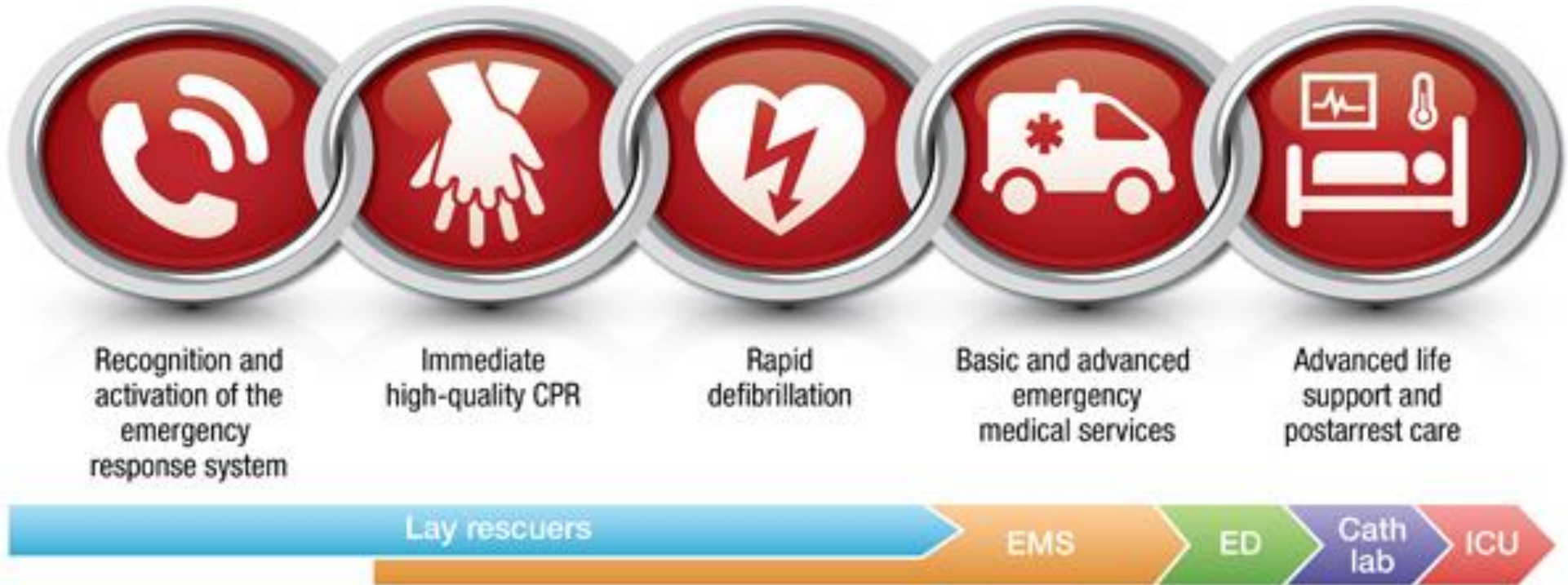
# Out-of-hospital cardiac arrest (OHCA): The magnitude

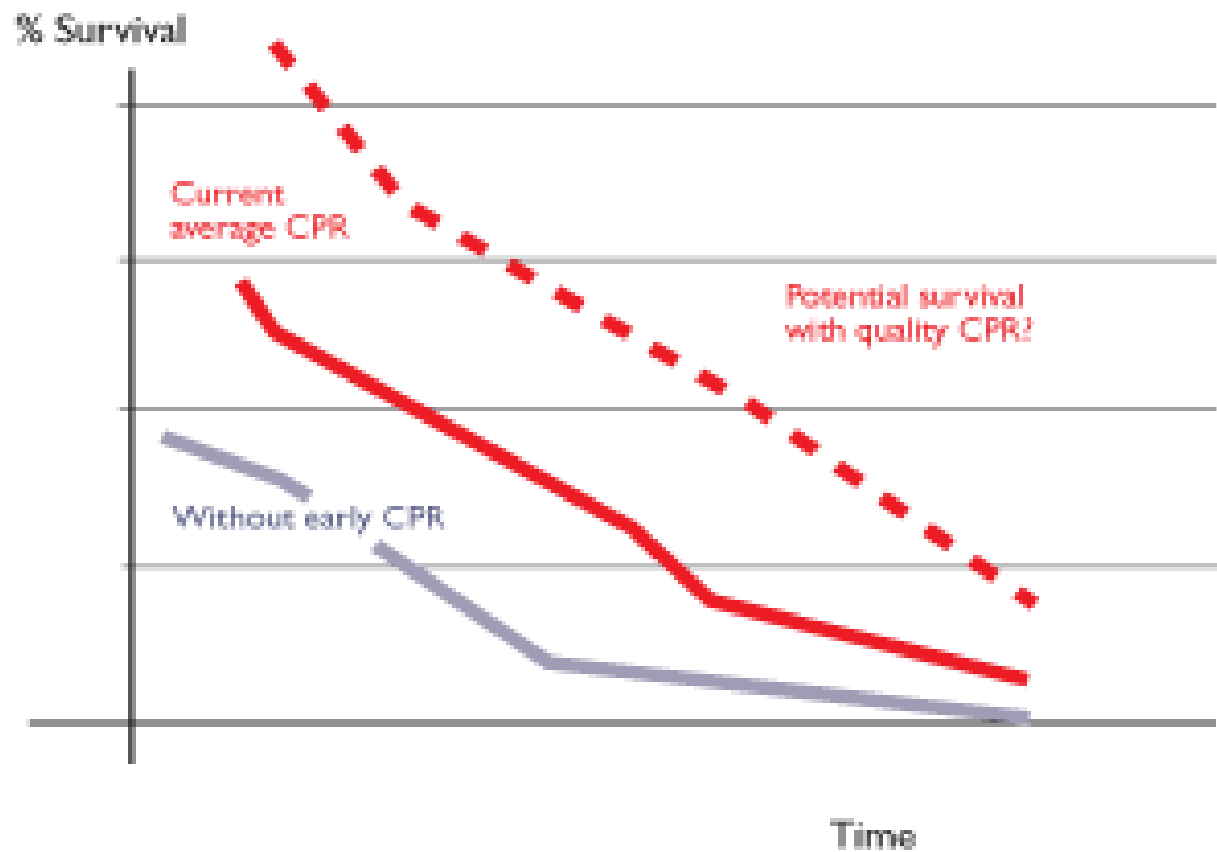
- ▶ USA: 300,000 per year
- ▶ Mainland: 550,000 per year

	USA	EU	MAINLAND
Survival to discharge (all rhythms, EMS treated)	3 – 16.3 %	3.6 – 22%	< 1%

Global average of survival ~ 10%

# The chain of survival

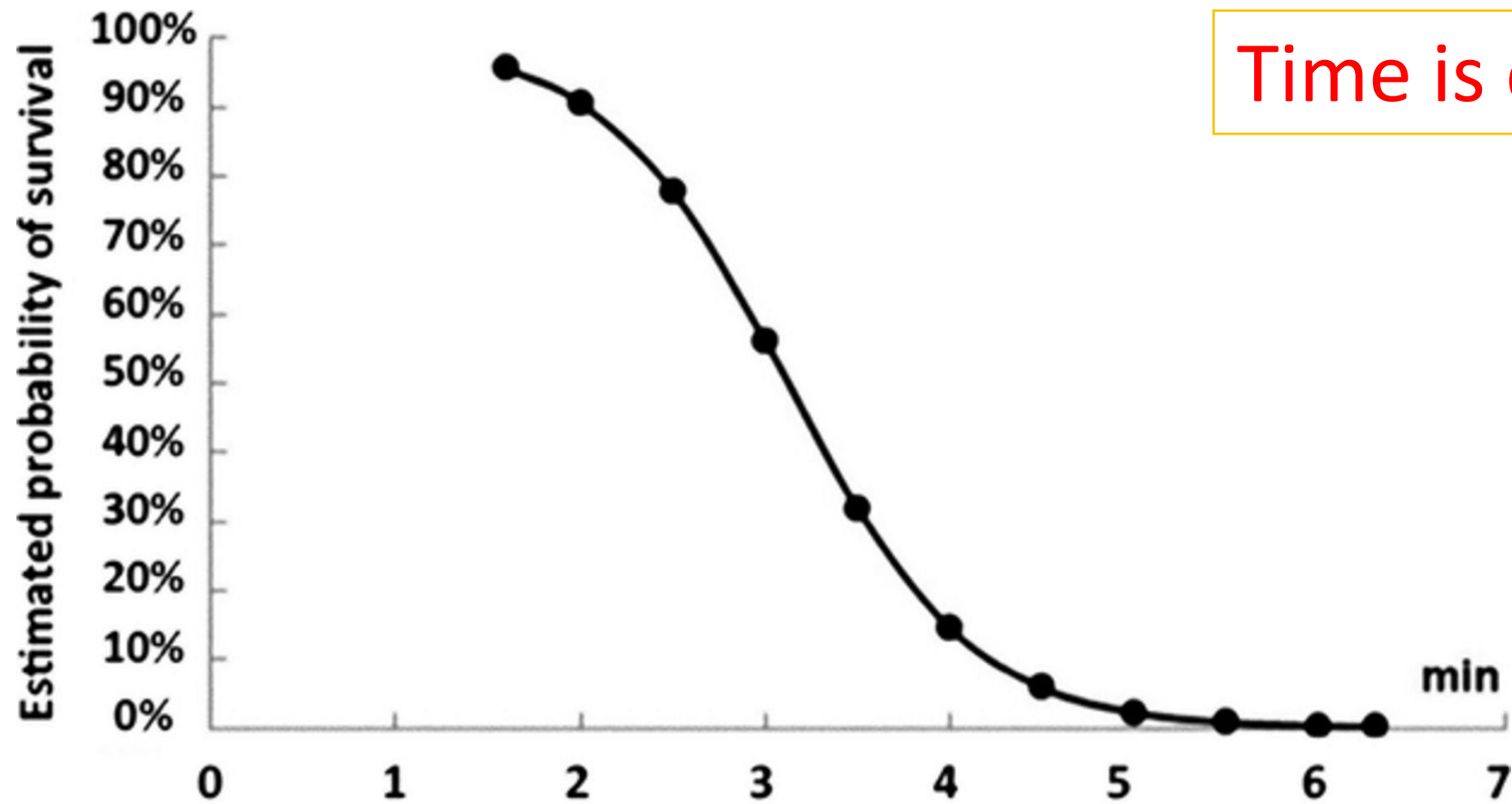




With every minute without CPR following sudden cardiac arrest, the probability of survival reduces by 7-10% per minute.

When bystander CPR is delivered, the patient stands a better chance as the probability for survival reduces to 3-4% per minute.

Overall, bystander CPR increases survival 2-3 times compared to no bystander CPR.



Time is crucial.

# The Hong Kong scenario



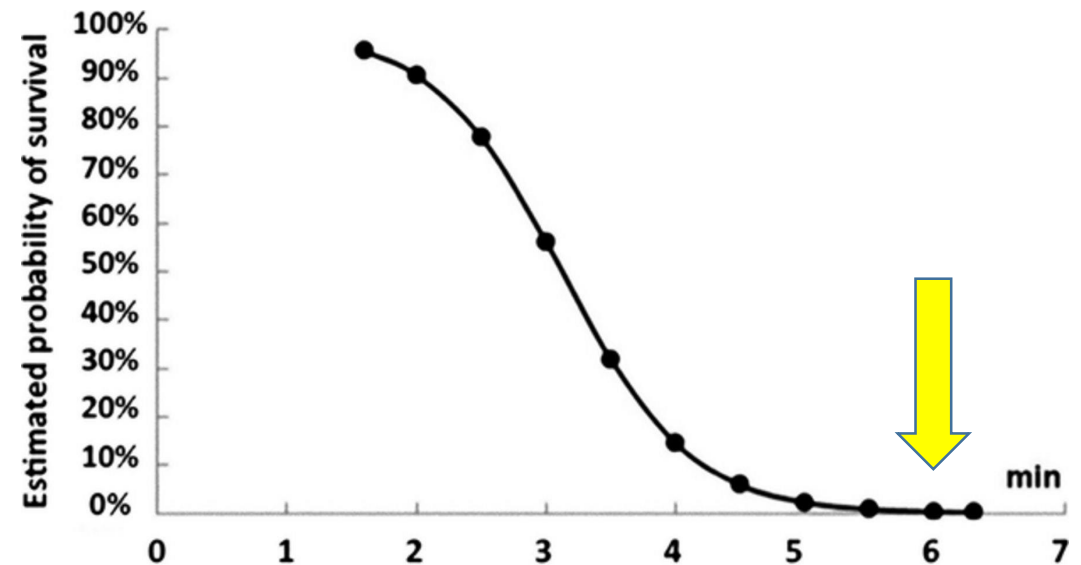
- ▶ 5000 – 6000 cases each year
- ▶ < 1 in 44 OHCA survive to discharge (2.3%)
- ▶ < 1 in 66 survive with good neurological outcome (1.5%) (cerebral performance category score  $\leq 2$ )

# The chain of survival in Hong Kong



Bystander CPR rate = 28%

6 minutes







...to increase the probability of OHCA survival...

By further increasing the bystander CPR rate.....

By **increasing the number of people who are willing and able to do CPR promptly and properly.**

## A community wide CPR promotion program

1. Multi-disciplinary collaboration
2. Targeting the most vulnerable
3. Targeting the most keen to learn and help
4. Enhancing acquisition and retention of skills and knowledge by innovative pedagogy and technology
5. Not only the know-how but also willingness to offer help
6. raising public awareness

## Strategies



## Multidisciplinary collaboration



FASA  
HKRC  
HKSJ Brigade  
HK College of EM  
HK Society of Emergency Medicine & Surgery  
HK College of Emergency Nursing  
Emergency Nurses Association  
Ambulance Service Institute  
Elderly Academy  
The University of Hong Kong  
Quality Education Fund, Education Bureau  
The Philippines Consul

## Targeting the most vulnerable



# Targeting the most vulnerable



# Targeting the most keen to learn and offer help

A survey of secondary school students revealed that > 90% of them are willing to help a stranger in need.

COCPR training program for secondary school students

## **Strong recommendation by professional bodies**

- American Heart Association
- The Resuscitation Council of UK
- European Resuscitation Council
- American Academy of Pediatrics
- World Health Organization

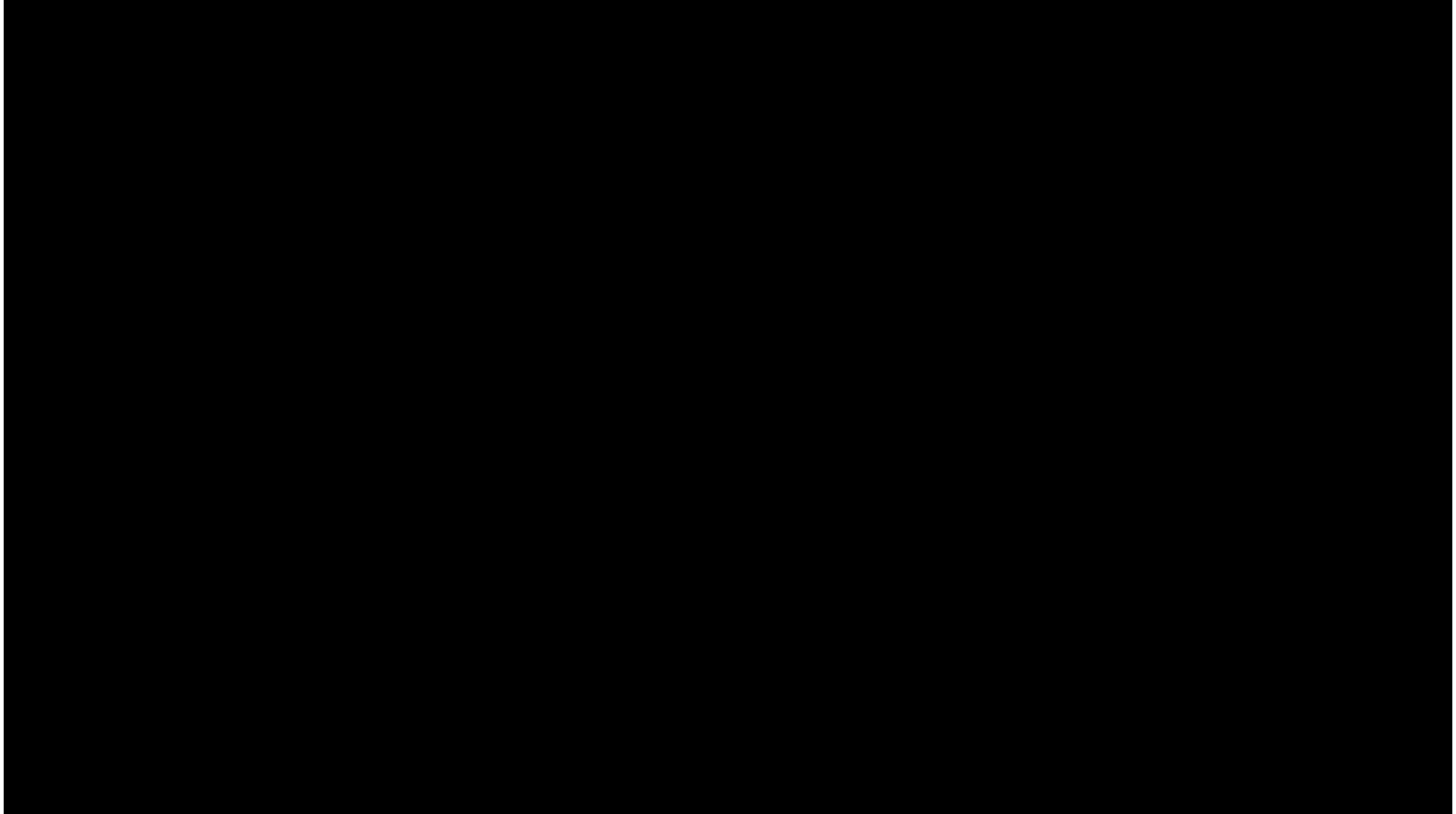
## **CPR training in school curriculum (Compulsory or optional)**

- Scandinavian countries e.g. Norway, Denmark
- European countries e.g. UK, Czechoslovakia
- Japan
- United States, Canada, New Zealand

In 2017, > 300 teachers and > 7000 students from 32 secondary schools were taught compression-only CPR.



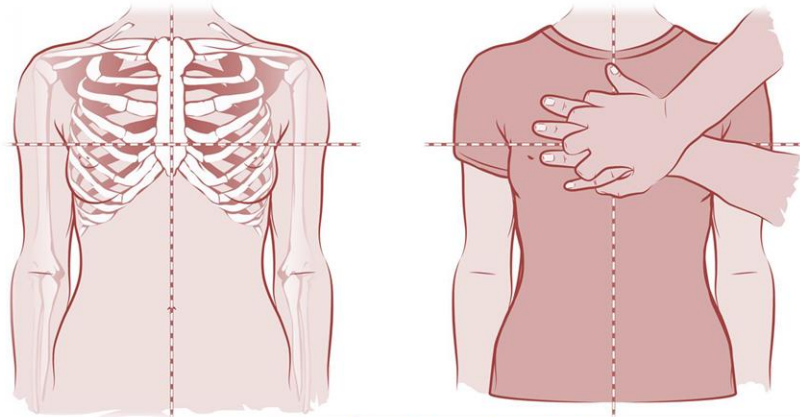
# Innovative pedagogy



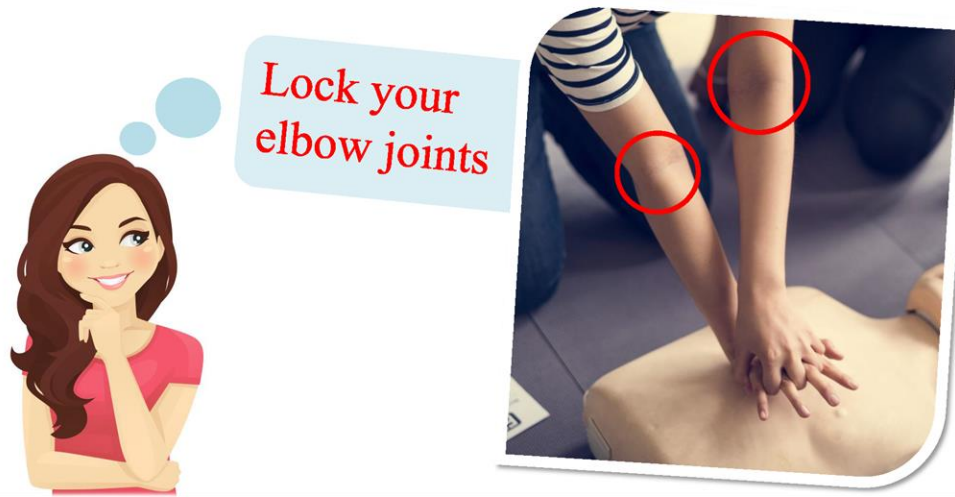


# The e-learning module

## 1. Correct Hand Position



## 2. Straight Arms



## 3. Appropriate Compression Depth



## CPR app



# Not only the know-how....Values education





## Raising public awareness

# CPR marathon 2018 – set a new world record

3014 citizens doing compression only CPR in succession



# Impacts

- > 10,000 HK citizens trained in CPR
- Raised public awareness
- Prototype for future incorporation in school curriculum
- Adoption by secondary schools in Shenzhen



