



Telephone CPR and Metrics

Dr Desmond Mao

Consultant, Khoo Teck Puat Hospital

Medical Consultant, Unit of
Prehospital Emergency Care

*“Towards a World Class Pre-hospital Emergency Care
System for Singapore”*

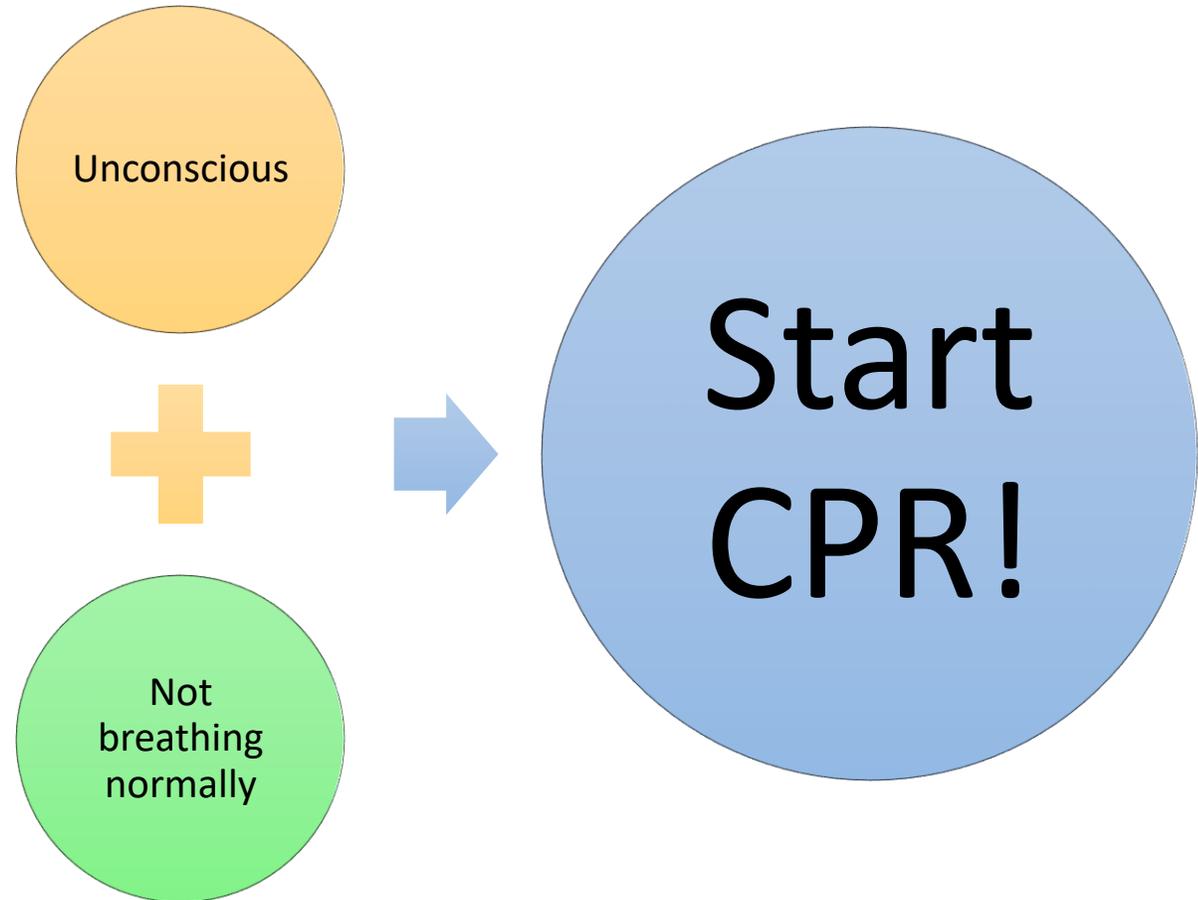


Acknowledgements

- Dr Ng Yih Yng
- A/Prof Marcus Ong
- Dr Benjamin Leong

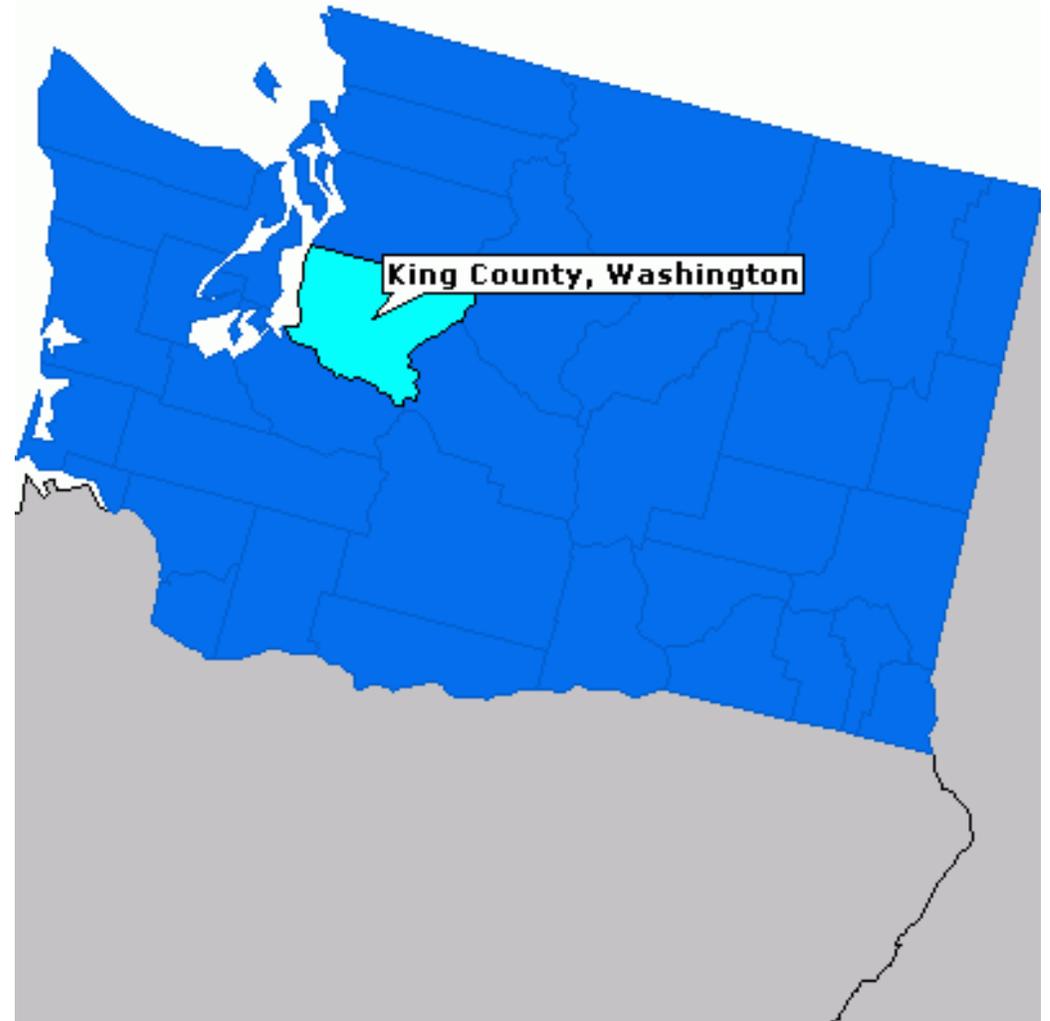
What is Dispatcher Assisted CPR?

- Dispatcher asks 2 KEY questions
- Coaches caller to do hands-only CPR
- For paediatric age group – Mouth to mouth is encouraged



Beginnings of Telephone-CPR

- Beginning in 1981
- We have come a long way since then!





ELSEVIER

Contents lists available at [ScienceDirect](#)

Resuscitation

journal homepage: www.elsevier.com/locate/resuscitation



EUROPEAN
RESUSCITATION
COUNCIL

Clinical paper

A before–after interventional trial of dispatcher-assisted cardio-pulmonary resuscitation for out-of-hospital cardiac arrests in Singapore[☆]



Sumitro Harjanto^a, May Xue Bi Na^b, Ying Hao^c, Yih Yng Ng^d, Nausheen Doctor^e,
E. Shaun Goh^f, Benjamin Sieu-Hon Leong^g, Han Nee Gan^h, Michael Yih Chong Chiaⁱ,
Lai Peng Tham^j, Si Oon Cheah^k, Nur Shahidah^e, Marcus Eng Hock Ong^{e,l,*},
For the PAROS study group

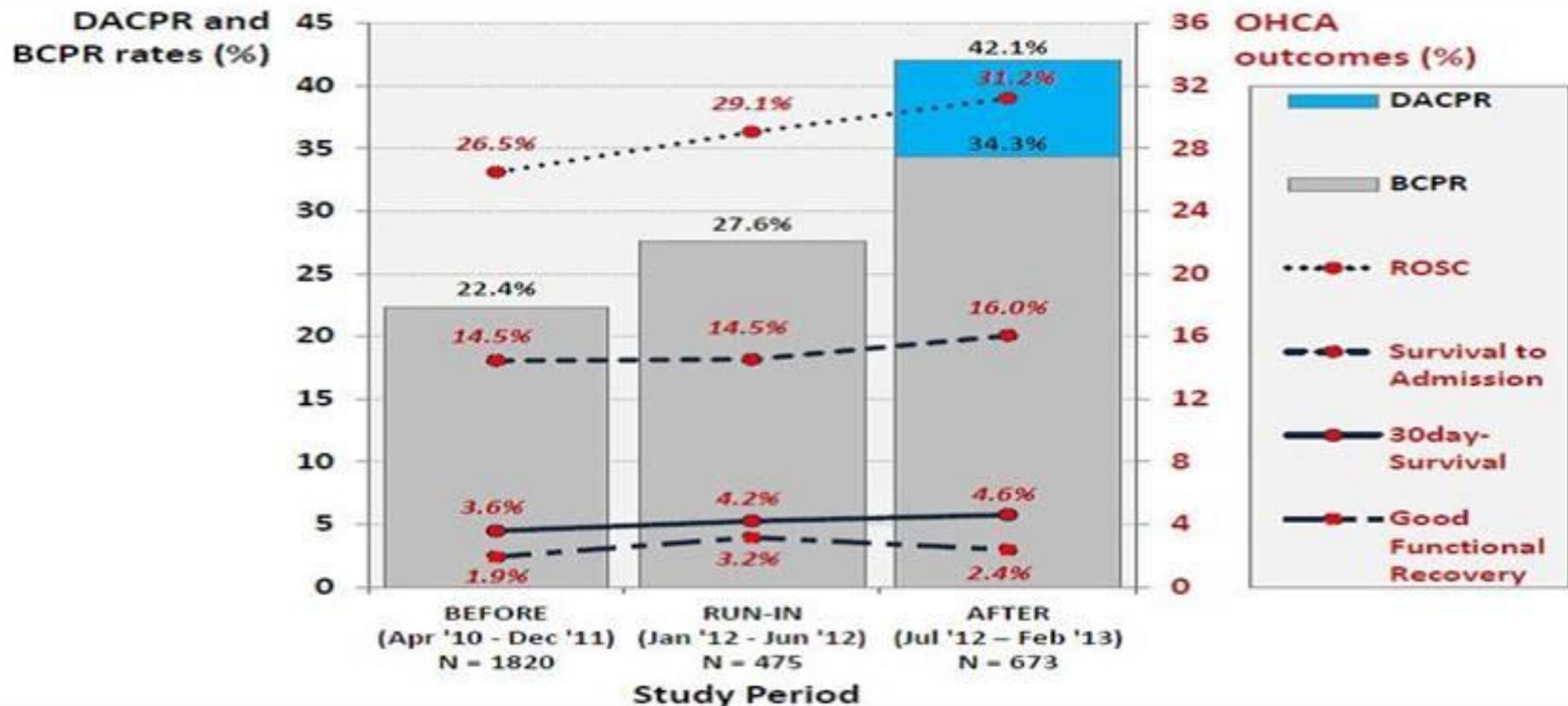


Figure 2: The trend of BCPR and DACPR rates and OHCA outcomes across the study periods.



Resuscitation

Volume 130, Supplement 1, September 2018, Page e25



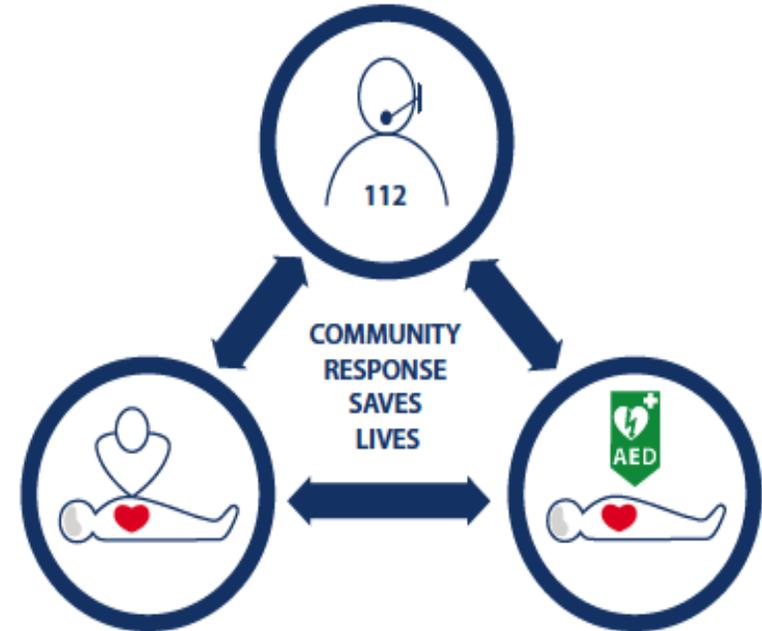
AS045

Improvements in bystander CPR rates and survival for Out-of-Hospital Cardiac Arrest with a comprehensive dispatcher-assisted CPR program in Singapore

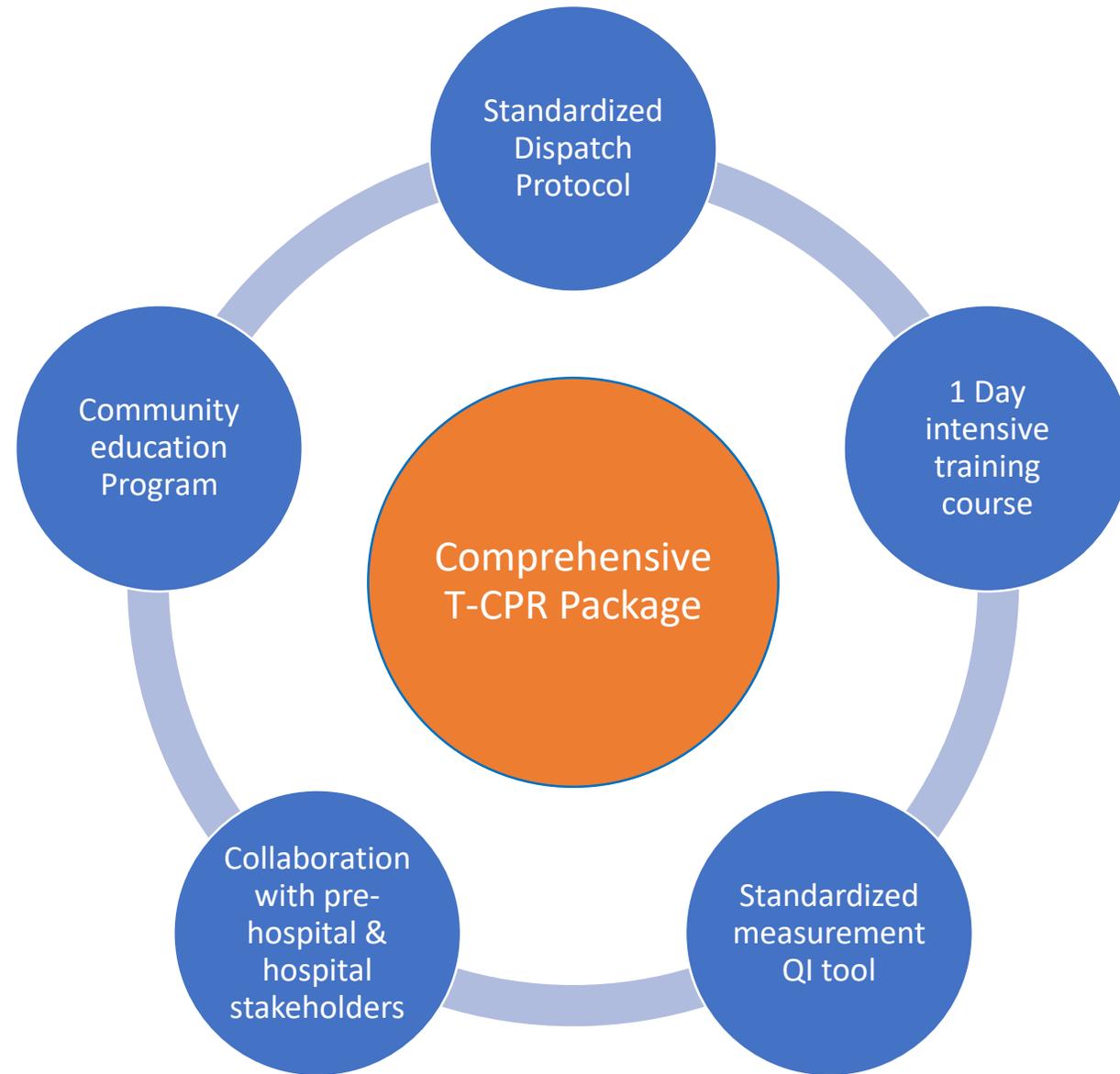
Marcus E.H. Ong ^{1, 2} , Jasmine Y.Y. Lim ², Win Wah ¹, Nur Shahidah ¹, Susan Yap ¹, Pin Pin Pek ¹, Yih Yng Ng ³, Benjamin S.H. Leong ⁴, Han Nee Gan ⁵, Desmond R. Mao ⁶, Michael Y.C. Chia ⁷, Si Oon Cheah ⁸, Lai Peng Tham ⁹

What we know

- T-CPR increases Bystander CPR rates
- Most data suggests that T-CPR increases survival rates and good neurological outcomes
- QI/QA improves quality of T-CPR



Ingredients for Success



Standardized Dispatch Protocol

1
Hello - 995. What's your emergency?

2
Where is the patient? What's your ADDRESS?
Do you know the postal code?
What's the nearest street name?
read back: "The address is....."

3
What is your PHONE number?

4
How old is he/she?
(Is it a child or an adult?)

5
Is he/she awake?

6
Is he/she breathing normally?
Can you describe the breath sounds?
Can you see the chest rising?

Ok, he/she is not breathing normally
We will now start CPR in series of 30 compressions and 2 ventilations
I will help you. An ambulance is on the way

7
Can you put your phone in speaker mode?
- Place the phone on the floor in front of you. Can you hear me?

8
Is the patient lying on his/her back?
Do you have access to the patient's chest?

9
Listen! Remove any jacket, to make compressions easier

10
Move the patient's arm straight out towards you.
Kneel down with the patient's arm between your knees. Get closer to the patient.



1 Day Intensive
Program for both
Call-takers and
Dispatch Center
Managers

Standardized Measurement QI Tool

Dispatch: Preliminary

Dispatch agency	SCDF		
Date of call	<input type="text"/>	/	<input type="text"/>
		/	<input type="text"/>
			(dd/mm/yyyy)
Time of call	<input type="text"/>	:	<input type="text"/>
		:	<input type="text"/>
			(hh:mm:ss)
PAROS case number (Official/PAROS HQ use only)	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>
Incident No/CAD	_____		
Was this a cardiac arrest before arrival of EMS?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₂ No	<input type="checkbox"/> ₃ Unknown
CPR already in progress?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₂ No	<input type="checkbox"/> ₃ Unknown
Did Dispatch recognize need for CPR?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₂ No	<input type="checkbox"/> ₃ Unknown
CPR instructions started?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₂ No	<input type="checkbox"/> ₃ Unknown
Chest Compressions performed?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₂ No	<input type="checkbox"/> ₃ Unknown
Barriers to CPR	<input type="checkbox"/> ₁ Hang up phone	<input type="checkbox"/> ₂ Caller left phone	<input type="checkbox"/> ₃ Caller refused
	<input type="checkbox"/> ₄ Caller not with patient	<input type="checkbox"/> ₅ Language barrier	<input type="checkbox"/> ₆ Overly distraught
	<input type="checkbox"/> ₇ Couldn't move patient	<input type="checkbox"/> ₈ Patient's status changed	<input type="checkbox"/> ₉ Difficult patient access
	<input type="checkbox"/> ₁₀ Other (please specify)		<input type="checkbox"/> ₁₁ Not applicable

7

It Takes a System to Save a Victim

Collaboration is needed

Community Education



STAY ON
THE LINE



AED



DORE

PUSH HARD
AND FAST



**The Road to Recognition
and Resuscitation**

**The Role of Telecommunicators and
Telephone CPR Quality Improvement in
Cardiac Arrest Survival**

Continuous Quality Improvement

Current Recommendations - Diagnosis

2.10: RECOGNITION PERFORMANCE STANDARDS AND BENCHMARKS

Percentage of total OHCA cases correctly identified by PSAP ⁸	75%
Percentage of OHCA cases correctly identified by PSAP that were recognizable ⁹	95%
Percentage of call taker recognized OHCA Receiving T-CPR ¹⁰	75%
Median time between 911 call and OHCA recognition ¹¹	Less than 120 seconds (less than 60 seconds from address acquisition to telecommunicator recognition of OHCA)

Current Recommendations - Treatment

Time to rapid dispatch <60seconds

Median time between 911 call and
first T-CPR directed compression¹⁴

**<180 seconds (less than
120 seconds from
address acquisition to
first CPR compression
directed by the
Telecommunicator)**

Discussion Time!

Discussion (1)

1) Tele-Diagnosis of OHCA

- What are the shortcomings with current methods/phrasing?
- What are more accurate ways to pick up OHCA?

Discussion (2)

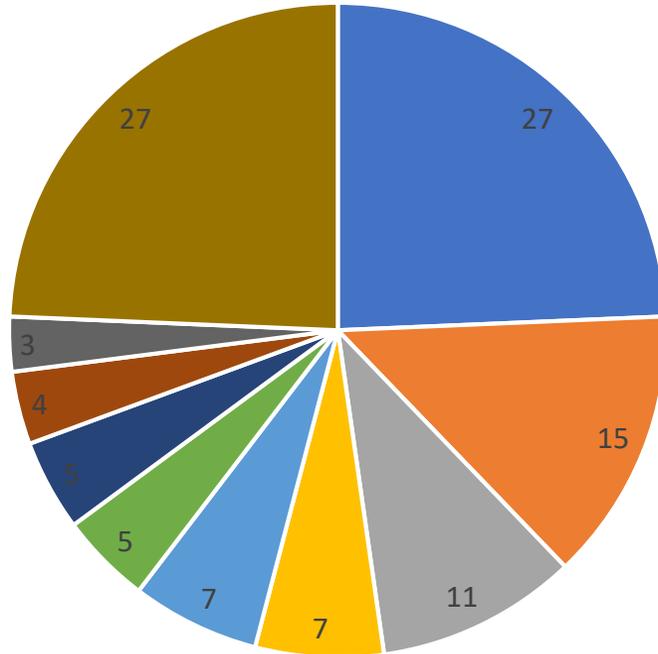
2) Treatment

- Barriers to starting DA-CPR
—> What are the possible solutions?

- CPR on the ground vs the bed? Which is better?

- Methods to measure the quality of tele-CPR. Are there any?

Barriers



- Couldn't move patient
- Caller refused
- Hung up phone
- Patient status changed
- Caller left phone
- Overly distraught
- Caller not with patient
- Difficult access to patient
- Language barrier
- Others



Contents lists available at [ScienceDirect](#)

Resuscitation

journal homepage: www.elsevier.com/locate/resuscitation



Clinical paper

Barriers to dispatcher-assisted cardiopulmonary resuscitation in Singapore[☆]



- 37.2% of cases had one or more barriers

Discussion (3)

3) Reporting Metrics

- Areas that we need further standardisation.

4) Training

- Role of dispatchers. Horizontal vs Vertical component. What is the ideal workflow?

- What should training focus on?

The image is a composite of three parts. At the top right is a smartphone screen displaying a 'METRONOME' app with a large '100' and a 'STOP' button, and a 'PRACTICE TIMER' with buttons for 1, 2, 3, 5, 10, 15, 20, and 30 seconds. To the left of the phone are two blue arrows: one pointing right with the text 'Measure CPR rates' and one pointing down with the text 'Play recordings (2X speed!)'. At the bottom is a screenshot of a web browser showing the VideoLAN website, which features the VLC logo (an orange traffic cone) and a 'Download VLC' button for Version 2.0.3 (Windows, 22 MB).

Discussion (4)

6) New Operational Roles for Dispatchers

- Handling crowd-sourced CPR Apps
- What are the standards & reporting metrics?

Discussion (5)

7) Collaboration with other stakeholders

- Standardization with CPR educators
- Giving location



Areas for Discussion

1. Tele-diagnosis of OHCA
2. Treatment Barriers
3. Reporting Metrics
4. Training of Dispatchers
5. New Operational Role for Dispatchers
6. Collaboration