

Overview of EMS System – The Role of Dispatch

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Where does EMS start?

“A network of services coordinated to provide aid and medical assistance from **primary response to definitive care**, involving personnel trained in the rescue, stabilization, transportation, and advanced treatment of traumatic or medical emergencies. **Linked by a communication system that operates on both a local and a regional level**, EMS is a tiered system of care, which is usually **initiated by citizen action in the form of a telephone call to an emergency number.**”

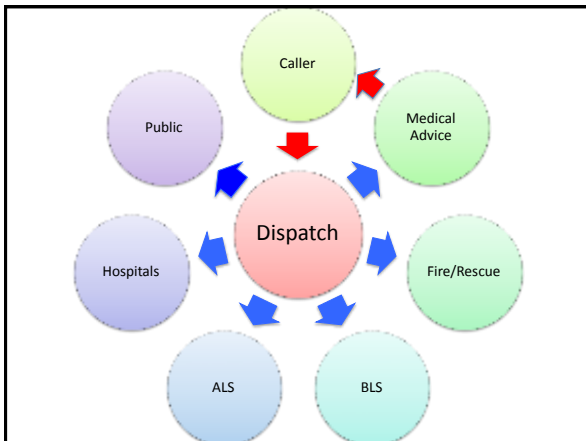
- Mosby's Medical Dictionary, 8th edition. © 2009, Elsevier.



Quiz – Which rings do the dispatch centre have influence over?



Dispatch Center Staff Competency

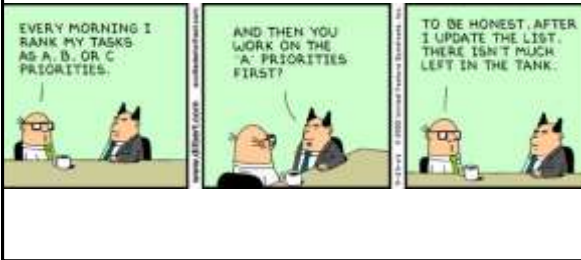


Are dispatchers Healthcare Professionals?

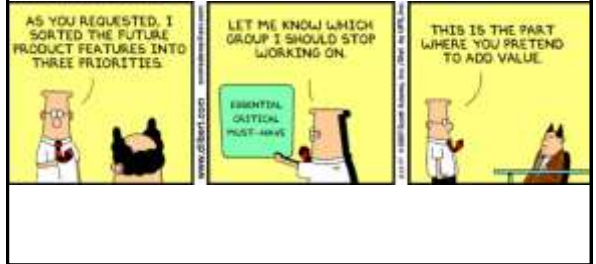


Making Triage Decisions

- Because Resources are ALWAYS LIMITED

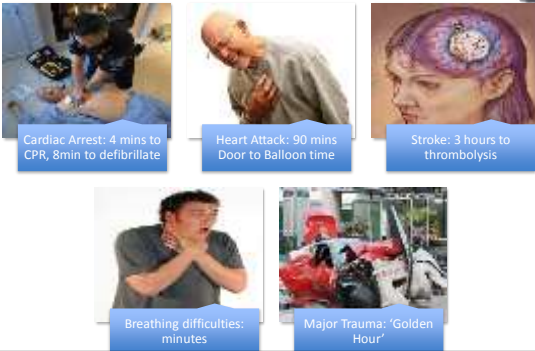


When everything is important, nothing is actually important!



The First Hour Quintet

- First raised at the European Resuscitation Council mtg (09/02)



How can we be specific?

EPIDEMIOLOGICAL CASE
Does the use of the Advanced Medical Priority Dispatch System affect cardiac arrest detection?
A. Rowland, M. Swales, C. Hatcher-Savage
May 2011 17(5):113-115

Background: Cardiac arrest is the most common respiratory complication seen by the ambulance service. Clinical survival from this event depends very much on the effectiveness of the ambulance service in the minutes after the onset of the event. The purpose of this study was to determine the effect of the use of the AMPS on the detection of cardiac arrest. The AMPS is a computerized system that uses a series of questions to determine the nature of the emergency and to provide the ambulance crew with the appropriate instructions. The study was conducted in a rural area of the UK. The study was conducted in a rural area of the UK. The study was conducted in a rural area of the UK.

- “... accurate identification of patients ...”
- “... compliance with **protocol** is an important factor ...”
- Increase of **200% of patients** accurately identified in cardiac arrest

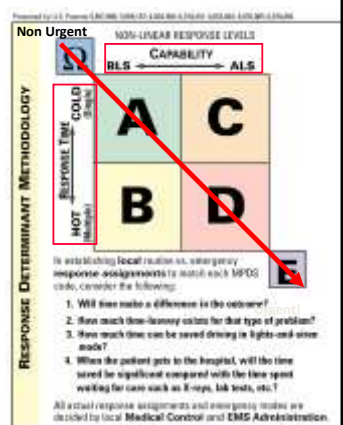
Improved Response Times with Motorcycle Based Fast Response Paramedics in an Urban Setting*

Marcus Ong Eng Hock MBBS, FRCS (1997), Yong Hock Choo FRCS (Neurology), Peripartum Care (Specialist),
Vishwanathan Anantharaman MBBS, FRCS (1997)
Department of Emergency Medicine, NKH
* Clinical Trials and Epidemiology Research Unit, Ministry of Health, Singapore



When dispatched correctly, motorcycle paramedics were ~5 mins faster than ambulances

Non-Linear Response Levels
Capability vs. Response Time



Resource Deployment . . . Just like dispensing medication



Dispensing Medicine

- the right patient
- the right drug
- the right dose
- the right route
- the right time

Dispatching EMS

- Right patient
- Right type of appliance(s)
- Right number(s)
- right route
- right timing

Dispatch Responds to Cardiac Arrest

- “The FIRST first responder...”
- “...Zero Minute Response Time...”

– Principles of Emergency Medical Dispatch 4th Edition (Clawson)



NAEMSP Position Paper:

“Standard medically approved telephone instructions by trained EMDs are safe to give and in many instances are a moral necessity”

Journal of P&DM, 1989


“I might be required to continue CPR for as long as 30 minutes...because ambulance often get caught in traffic...”

– Straits Times forum page April 14, 2012

Posted on Apr 14, 2012


Quicker aid
 “Paramedics on motorcycles will decrease response times markedly, and their prompt arrival increases the chances of recovery.”

MRS SAM BLAKEY: I recently underwent cardiopulmonary resuscitation (CPR) training and was alarmed to learn that I might be required to continue CPR for as long as 30 minutes before the medics arrive. This is because ambulances often get caught in traffic, with many drivers not giving way. However, paramedics on motorcycles are able to weave through traffic and act as first responders in life-threatening situations. More mobile paramedics will surely decrease response times markedly, and their prompt arrival significantly increases the chances of recovery for the critically injured.


Circulation 

Dispatcher-assisted cardiopulmonary resuscitation. Validation of efficacy.
 A L Kellermann, B B Hackman and G Some


Circulation. 1989;80:1231-1239
 doi: 10.1161/01.CIR.80.5.1231



Telephone CPR




Telephone CPR +Training






Training

	Group A	Group B	Group C
Telephone CPR	✓	✓	✗
Prior CPR Trg	✗	✓	✓
% of adequate ventilation cycles	36%	52.7%	58.3%
Time to ventilation	2:38	2:39	1:03
Time to compression	4:07	3:53	1:15
% of adequate compression cycles	26.9%	34.4%	12.6%

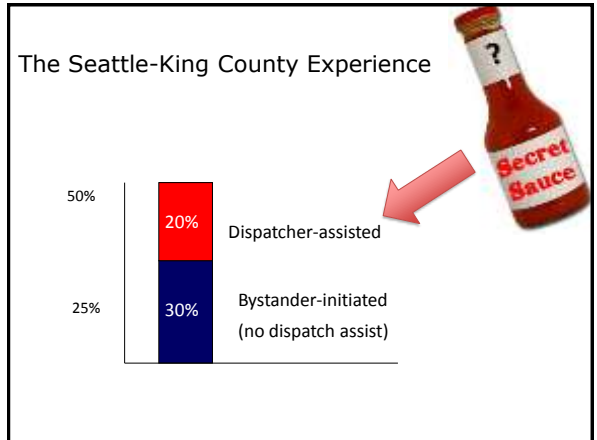
- Untrained bystanders did better CPR with telephone assistance than even trained CPR providers.
- This study was done **14 years ago!**



American Heart Association Class I recommendation!

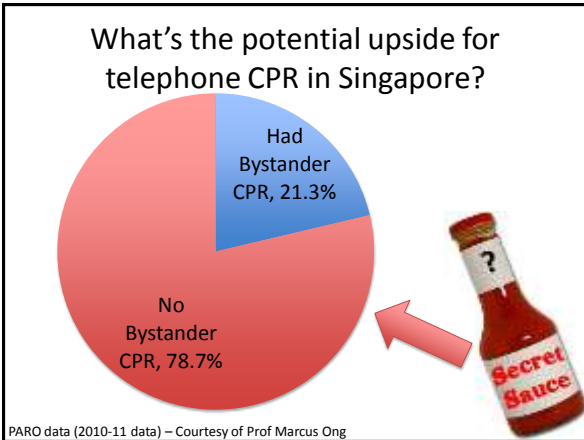
 <p>Recognizing OHCA</p> <ul style="list-style-type: none"> • “Dispatchers should be specifically educated in 	 <p>Aggressively start CPR</p> <ul style="list-style-type: none"> • “Dispatchers should recommend CPR 	 <p>Hands Only CPR</p> <ul style="list-style-type: none"> • dispatcher pre-arrival CPR
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The Seattle-King County Experience



20%	Dispatcher-assisted
30%	Bystander-initiated (no dispatch assist)

What’s the potential upside for telephone CPR in Singapore?



21.3%	Had Bystander CPR
78.7%	No Bystander CPR

PARO data (2010-11 data) – Courtesy of Prof Marcus Ong

Outcome of Dispatcher-Assisted Cardiopulmonary Resuscitation for Out-of-Hospital Cardiac Arrest Preliminary Report


Joo Yeong Kim, Sang Do Shin, Kyoung Jun Song, Chu Hyun Kim¹, Chang Bae Park, Ji Yeon Jang
 Seoul National University College of Medicine
¹Inje University College of Medicine

Bystander CPR 11.4% + Telephone CPR 29.8% = 41.2%



Summary

- The dispatcher is the *nerve centre* of the EMS system
- The dispatch centre is able to influence the quality of EMS response
- Dispatch Assisted CPR is one of the most effective ways to improve cardiac arrest survival



Questions?

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