



**Medical Dispatch Science:
State of the Art in 2018**

Fabrice Dami, M.D., MBA
Senior physician, Emergency Department
Lausanne University Hospital

Medical Director
State of Vaud Medical Dispatch
Switzerland



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Conflict of Interest

- None

Medical dispatch : a serious matter

[«911»](#)

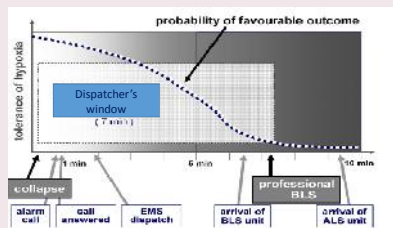
Roles of Medical dispatch centres

- Value added for the patient (outcome)
- Value added to the care system (efficiency and safety)

Added value for the patient: T-CPR is #1

- Essential role of CPR and early defibrillation
 - The more Cardiac Arrest patients benefit from CPR, the better the survival rate within a community
 - T-CPR increases CPR rate; therefore it increases the survival rate
- Lerner EB, et al. Emergency medical service dispatch cardiopulmonary resuscitation pre-arrival instructions to improve survival from out-of-hospital cardiac arrest: A scientific statement from the American heart association. Circulation 2012
- Localisation of AEDs and first-responders by Apps
- Fredman D, et al. Expanding the first link in the chain of survival – Experiences from dispatcher referral of callers to AED locations. Resuscitation 2016
- Rings M, et al. Mobile-Phone Dispatch of Laypersons for CPR in Out-of-Hospital Cardiac Arrest. New England Journal of Medicine 2015

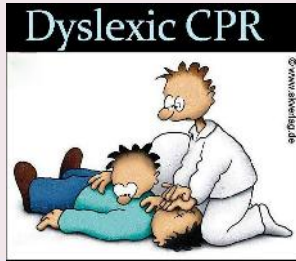
Dispatcher's window



Breckwoldt J, et al. Perceptions of collapse and assessment of cardiac arrest by bystanders of out-of-hospital cardiac arrest (OOHCA). Resuscitation 2009

Dami F, et al. The Dispatcher's window. Resuscitation 2010

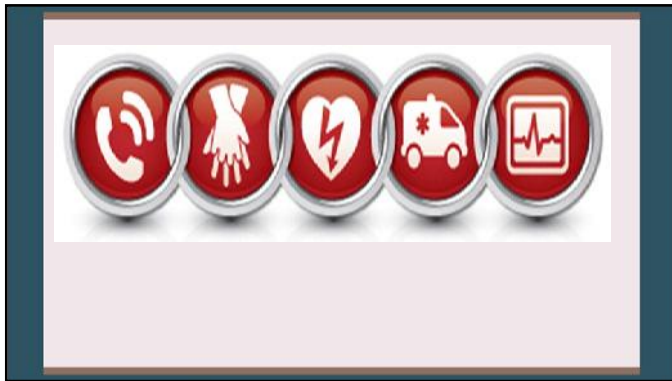
The importance of the dispatcher's window!

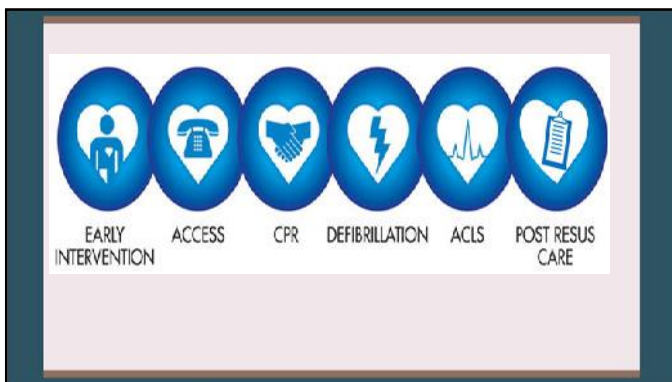


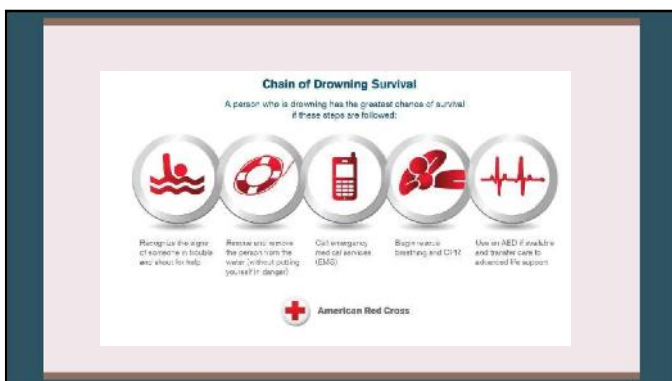
T-CPR: barriers

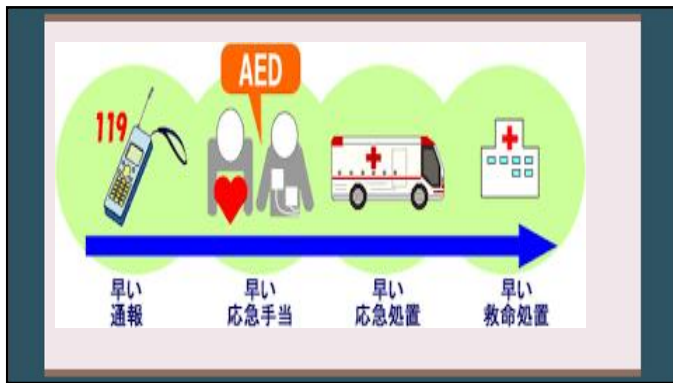
- Training
- Agonal breathing
- No – No – Go !
 - 50% false positive!
- To measure its performance (delay to recognize CA, to start CPR)
Dani F, et al. Time to identify cardiac arrest and provide dispatch-assisted cardio-pulmonary resuscitation in a criteria-based dispatch system. Resuscitation 2015
Lewis M, et al. Dispatcher-assisted cardiopulmonary resuscitation: time to identify cardiac arrest and deliver chest compression instructions. Circulation. 2013
- 50% of the US PSAPs do not provide T-CPR for OHCA
 - Room for improvement to provide high performance T-CPR
Sutter, et al. Telephone CPR instructions in Emergency Dispatch systems: Qualitative Survey of 911 Call Centers. West J Emerg Med 2015

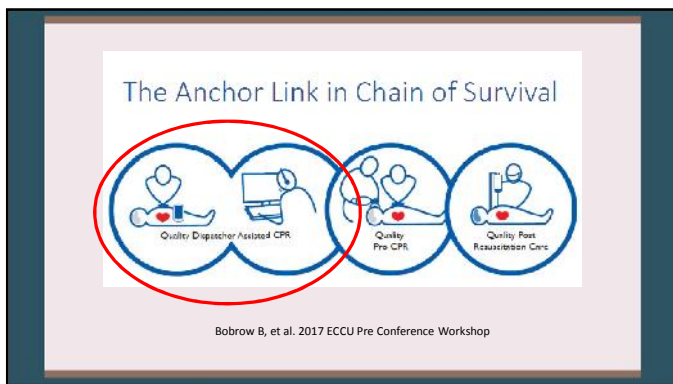












Added value for the patient:
prearrival instructions

- Aspirine
- Epinephrine
- Naloxone
- Glucagon

Added value for the system : efficiency & safety

- Crashes and fatalities occurring during emergency use
Kahn, et al. Characteristics of fatal ambulance crashes in the united states: an 11-year retrospective analysis. PEC 2009
- Life threatening emergencies? 5%
- Dispatch: obligation to measure performance when using L&S (over and under-triage) :
 - Benchmarking with severity assessed by EMS on the field
Dami F, et al. Prehospital triage accuracy in a criteria based dispatch centre. BMC Emerg Med. 2015
- Benchmarking with other DCs, other systems

Added value for the system: merger of dispatch centres

- Dispatch centres (DCs): essential but expensive component of healthcare systems
- Difficulties to hire dispatchers, to teach them specific competence (prearrival instructions)
- No more need for proximity of DCs and centres of population
- Streamlining does not mean rationing! Quality may improve
- Reducing the number of DCs : controlling the high costs of these structures
- Possible to lower the number of dispatchers, especially during night-time.

Dami F, et al. Merger of two dispatch centres: does it improve quality and patient safety? SITREM 2017

MEDICAL DISPATCH CENTRES			
	Year	Population in millions	Average population per dispatch in million
Countries:			
Iceland	2004	0.3	0.15
Norway	2004	4.5	0.20
Germany	2006	82.0	0.35
Switzerland	2008	7.5	0.31
Finland	2004	5.3	0.32
Sweden	2004	8.9	0.45
Switzerland	2015	8	0.47
Switzerland	2011	7.5	0.55
France	2004	66.4	0.57
Denmark	2004	5.4	0.60
Finland	2015	5.3	0.71
		(7 projects)	
Cities:			
Lausanne	2015	0.5	0.8
Fort Myers	2010	0.8	0.8
Memphis	2011	2.3	2.3
Miami	2010	2.5	2.5
Phoenix	2010	4.2	4.2

Dami F, et al. Dispatch centres: what is the right population catchment size? SITREM 2015

Futur: On the Technology side

- Videophone : help for triage, T-CPR



- Telemedicine

- Better quality medicine?
- Help for paramedics?
- Help for EDs?



Futur: Good practices

- « Less is more » « Choosing wisely » « Smarter medicine »
 - Prehospital care : iv lines, what is necessary to do in the field vs what is not
 - Dispatch science: use of L&S, use of HEMS (primary and interfacility transfers)

Take home messages

- T-CPR is the greatest added value DCs can/must offer directly to patients
- DCs should endorse other pre-arrival instructions
- Use of L&S should be rigorously assessed
- DC's must collect data and measure their activity to allow benchmarking (T-CPR, over/under-triage)

Thank you for your attention