

Telephone CPR (T-CPR): intensive training increases significantly the number of patients that will benefit of it

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SCIENTIFIC BACKGROUND

We know T-CPR improves the survival rate of out-of-hospital cardiac arrest (CA). Previous articles showed less than 50% of patients deserving T-CPR received it, mainly because dispatchers did not recognized CA.

AIM OF THE STUDY

To introduce systematic T-CPR by dispatchers in our Emergency Medical Service (EMS).

To assess the effect of specific training and awareness on dispatchers to the benefit of T-CPR.

To understand the reasons why T-CPR is not provided by dispatchers.

METHODS

Settings:

All our dispatchers are either paramedics or nurses.

Our EMS is in charge for all medical emergencies in the State of Vaud (650'000 inhabitants, 80'000 calls and 30'000 missions per year).

Methods

During 8 weeks, dispatchers received intensive T-CPR informations. In particular, results from previous studies showing a significant better rate of survival with T-CPR, have been presented on different occasions.

New guidelines for the interview, insisting on the quality of breathing « is he/she breathing NORMALLY? » and systematically asking to hear the patient's breathing over the phone have been introduced.

Finally, new protocols for T-CPR have been developed: what to say and how to say it to the bystander, with emphasis on chest compression (AHA 2005).

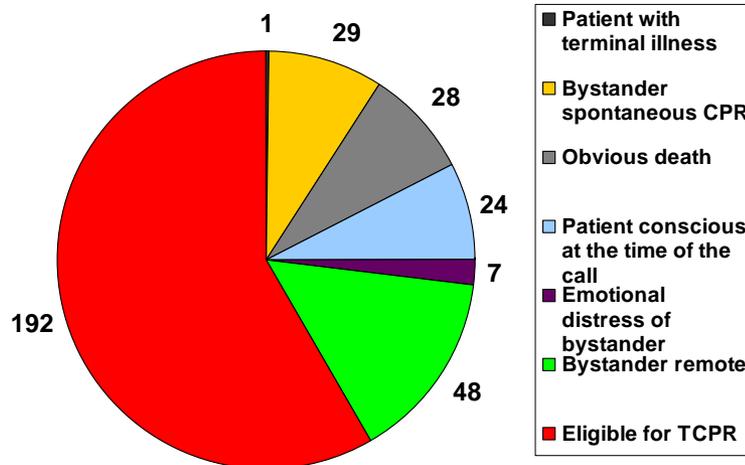
We then prospectively collected all non-traumatic cardio-respiratory arrests (Naca 6&7) for an 8 month period. We excluded cases where dispatchers could not provide T-CPR.

All tapes were then reviewed by the EMS medical director.

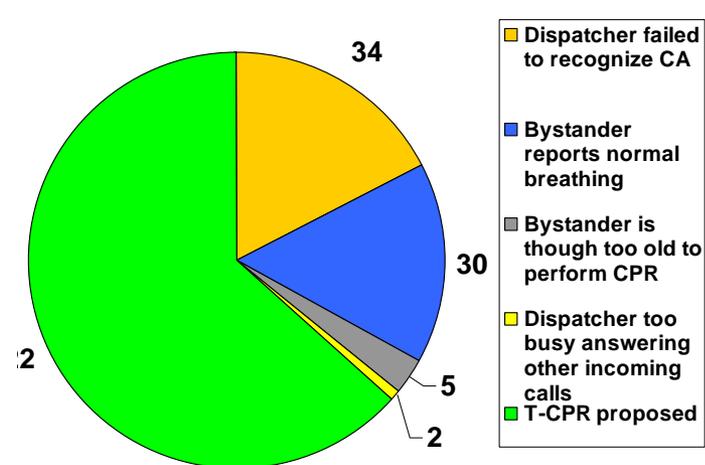
For each case, dispatchers had to explain the reason they did not provide T-CPR. Dispatchers understanding was then compared to the audio tape and the opinion of the medical director

RESULTS

POPULATION OF THE STUDY : Non traumatic NACA 6&7 (329 cases)



Eligible for T-CPR: 193 cases



CONCLUSION

According to our selection criteria, only 58% of all non traumatic NACA 6 & 7 are eligible for T-CPR.

Dispatchers provided T-CPR on 63% of all T-CPR eligible cases. They also proposed T-CPR on 8 occasions while it was not necessary (NACA below 6).

On 5 occasions, dispatchers supposed bystander was not able to realize CPR. Dispatcher should not suppose but systematically ask bystanders to perform it. Bystanders are always free to say no.

This is an excellent result after only 8 months of practice. This rate is similar or even slightly higher than results published from other EMS. This demonstrates that specific training to dispatchers that are either paramedics or nurses can quickly and dramatically improve TCPR's rate.

The main reasons T-CPR is not provided are because dispatchers failed to recognize CA and bystanders report the patient is breathing normally. In both cases, agonal breathing confuses dispatchers and bystanders. We need to develop even more the interview as well as the habit to systematically ask to hear the patient's breathing (phone on the mouth). In the future, as already demonstrated on simulated trials, video-phone will help dispatchers to suspect CA.

Further developments:

In term of results, we now need to collect the outcome of these patients to confirm the usefulness of T-CPR on mortality in out-of-hospital cardiac arrest in our State.

REFERENCES

- Bang A, Ortgren P.-O, Herlitz J, Währborg P. Dispatcher-assisted telephone CPR: a qualitative study exploring how dispatchers perceive their experiences. *Resuscitation* 53 (2002) 135-151
- Rea T.D, Eisenberg M, Cullley L, Becker L. Dispatcher-Assisted Cardiopulmonary Resuscitation and Survival in Cardiac Arrest. *Circulation* 2001;104:2513-2516
- Bang A, Herlitz J, Martinell S. Interaction between emergency medical dispatcher and caller in suspected out-of-hospital cardiac arrest calls with focus on agonal breathing. A review of 100 tape recordings of true cardiac arrest cases. *Resuscitation* 56 (2003) 25-34
- Vaillancourt C, Verma A, Trickett J, Crete D, Beaudoin T, Nesbitt L, Wells G.A, Stiell I.G. Evaluating the effectiveness of dispatch-assisted cardiopulmonary resuscitation instructions. *Academic Emergency Medicine*, october 2007, vol 14, no 10
- Bohm K, Rosenqvist M, Hollenberg J, Biber B, Engerström L, Svensson L. Dispatcher-assisted telephone-guided cardiopulmonary resuscitation: an underused lifesaving system. *European Journal of Emergency Medicine* 2007, 14:256-259
- Cheung S, Deakin C, Hsu R, Pelley G, Clewlow F. A prospective manikin-based observational study of telephone-directed cardiopulmonary resuscitation. *Resuscitation* (2007) 72, 425-435
- Johnsen E, Bolle SR. To see or not to see-Better dispatcher-assisted CPR with video-calls? A qualitative study based on simulated trials. *Resuscitation* 2008, Jun 24.
- Haufl S, Rea T, Cullley L, Kerry F, Becker L, Eisenberg M. Factors Impeding Dispatcher-Assisted Telephone Cardiopulmonary Resuscitation *Annals of Emergency Medicine* December 2003 42:6