

Bystander CPR beats AED improving the survival rate of out-of-hospital cardiac arrest

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PURPOSE

We studied the relative importance of bystander CPR and the number of AED in our region in term of survival of VF/VT cardiac arrest.

METHOD

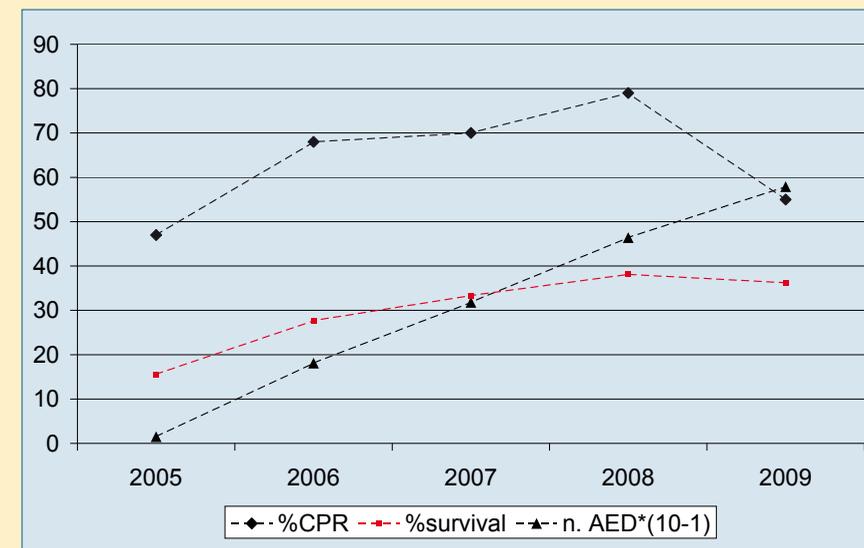
In June 2006 we implemented in Southern Switzerland an "Early Resuscitation and Defibrillation Program", creating a network of "first responders" coordinated by the regional dispatch center. Our population of 320.000 inhabitants is distributed over an area of 2812 square kilometers with, urban, rural and mountainous regions. We collected data according to the Utstein style and inserted them in a multiple regression formula.

RESULTS

Year	% Bystander CPR	N of AED	% survival (VF/VT)
2005	47	15	16
2006	68	181	28
2007	70	318	33
2008	79	464	38
2009	55	579	36

This data allow us to write a regression formula and to illustrate it with a graph:

Function: % survival rate = 0.2831 * (%Bystander CPR) + 0.0313 * (AED) + 2.3720



Graph: Relationship between rate of survival, bystander CPR and number of AED

CONCLUSIONS

The survival is strictly related to the number of bystanders CPR and AED. Currently, to raise the survival rate the increase of bystander CPR is more effective than increasing AED units. The "a value" (2.3720) is based on the quality of EMS and other not related factors. At present, to get the same survival rate we would need 9 to 10 more AED for each bystander CPR.

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