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No disclosures in relation to my presentation
or comments

Cardiac arrhythmias. Future challenges

- Sudden death
- LV dysfunction induced by arrhythmias or abnormal ventricular activation

Sudden cardiac death

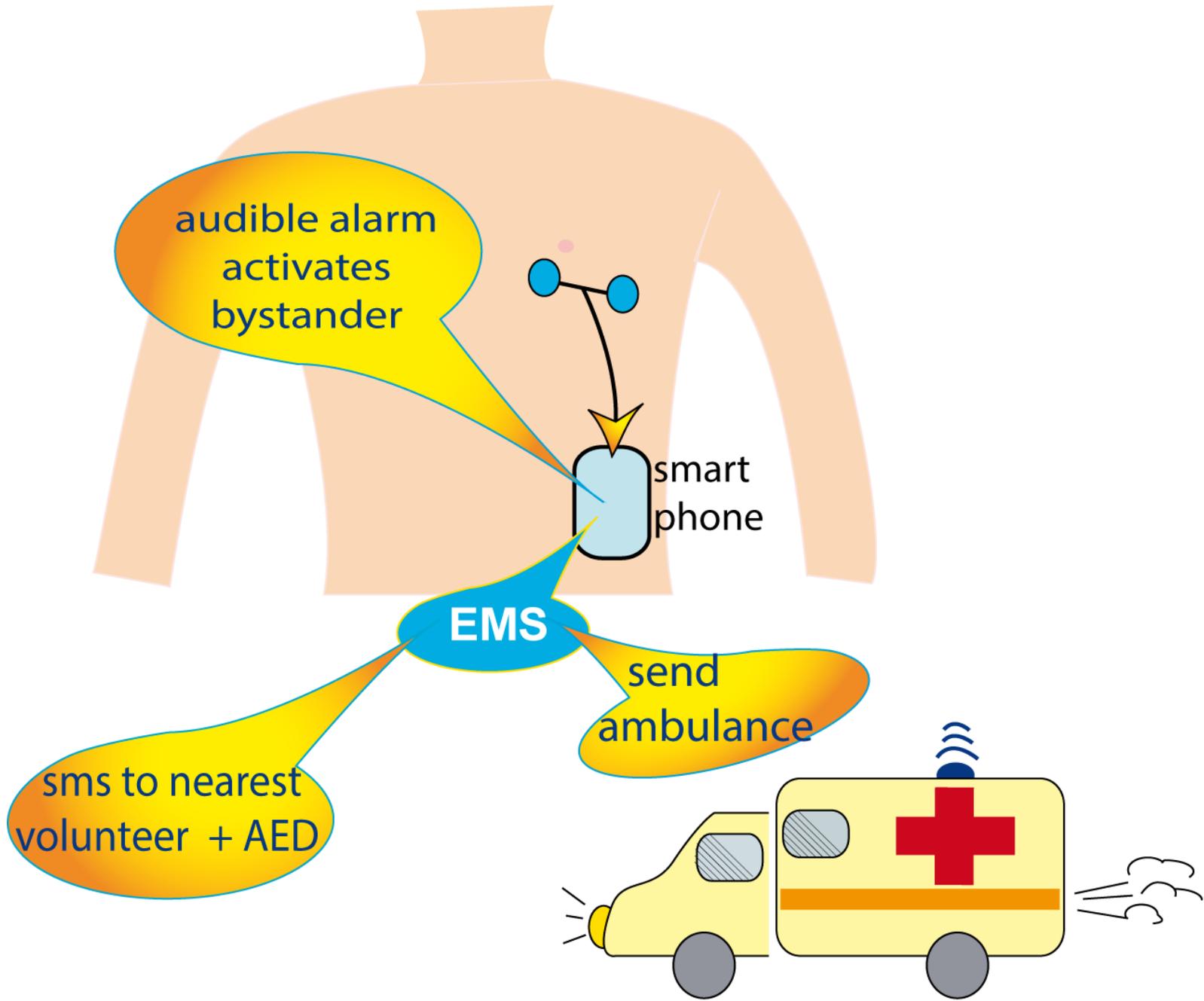
- Improving identification of the SCD candidate

Wellens H et al. Risk stratification of sudden cardiac death: current status and challenges for the future. Eur Heart J. 2014;35:1642-51

- Improving outcome of cardiac resuscitation

- Development of a VF alarm

Wellens H et al. Improving survival after out-of-hospital cardiac arrest requires new tools. Eur Heart J.2015. in press

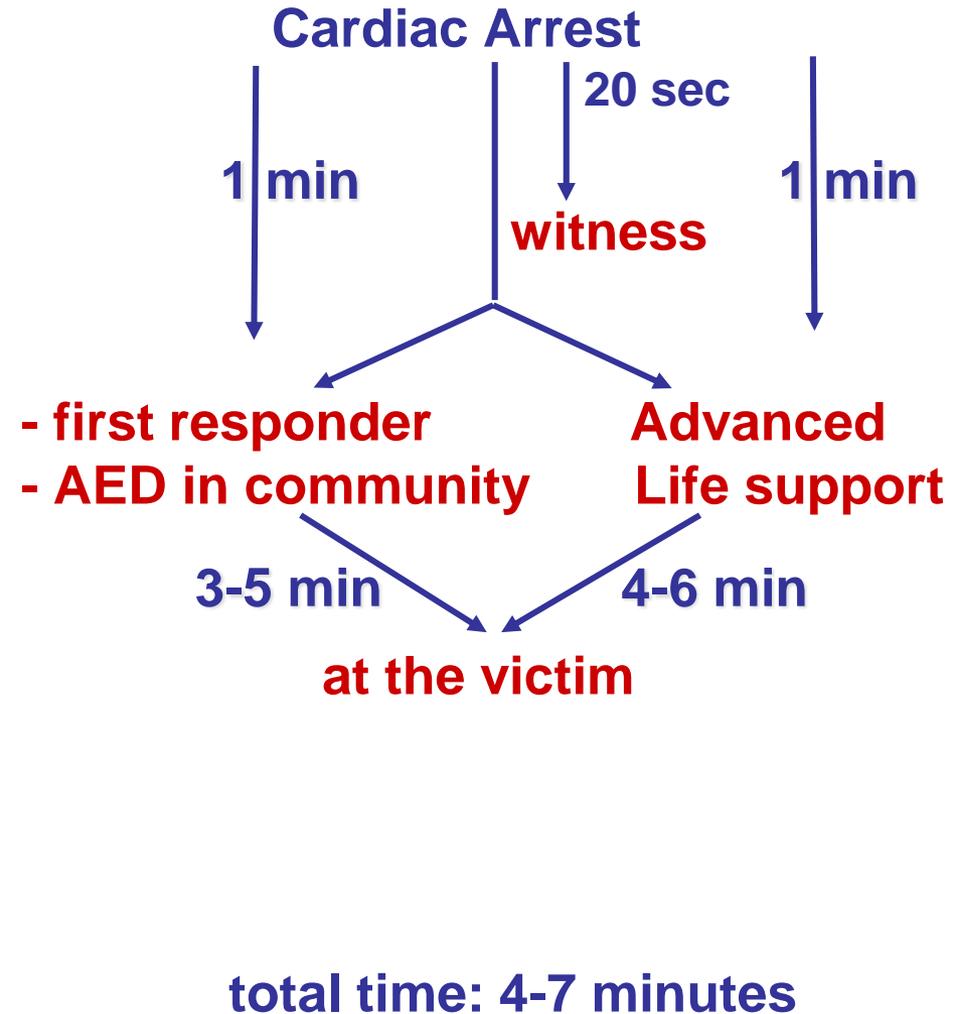


Resuscitation for Sudden Cardiac Arrest

Current approach



Device recognizing SCA making alarm and transmitting location of the victim



Arrhythmia-induced Cardiomyopathy

There is growing awareness that cardiac arrhythmias may induce LV dysfunction in the normal heart, and worsen cardiac function in patients with structural heart disease

This became clear when cardiac function normalized in patients with heart failure when they were cured from a frequently occurring arrhythmia with a high ventricular rate

Thereafter several different arrhythmias were described leading to worsening of cardiac function both in the normal heart and the heart with structural heart disease.

This presentation discusses the different types of supra-ventricular and ventricular arrhythmias that can cause this problem and the role of catheter ablation in their management.

LV dysfunction induced or worsened by frequent ectopic impulse formation and / or abnormal ventricular activation

- Supraventricular tachycardia:
 - Atrial Fibrillation
 - Atrial Flutter
 - Atrial tachycardia
 - Ectopic AV junctional tachy
 - AVRT with a rapidly conducting Acc P
 - AVRT with a slowly conducting Acc P
 - 1 to 2 AV nodal conduction during sinus rhythm
- Ventricular premature beats and ventricular tachycardia
- Abnormal ventricular activation:
 - Left bundle branch block
 - Ventricular pre-excitation
 - Ventricular pacing

Arrhythmia-induced Cardiomyopathy

- » Tachyarrhythmias with or without altered ventricular activation may induce or worsen LV dysfunction by electrophysiologic and morphologic remodeling
- » This may occur in patients without or with structural heart disease
- » Abolition of the arrhythmia may result in partial or complete reversibility of LV function
- » Although the exact relation between duration and type of an arrhythmia and reversibility requires more study the search for a potentially reversible cause is an important challenge

Improving cardiac arrhythmia management
requires close cooperation between
town and gown!