

# IMPROVING POST-COLLISION RESPONSE AND EMERGENCY CARE IN EUROPE

## Case Study: Rendez-vous System

ETSC's REVIVE project maps good practices in Emergency Medical Services (EMS) and Fire and Rescue Services (FRS) across the EU28 and raises the profile of both EMS and FRS on the national and European political agendas.

The REVIVE project aims at improving post-collision response and emergency care provided by EMS and FRS in order to mitigate the consequences of road collisions. It contributes to promoting the need for a coordinated, EU-wide action on tackling serious road traffic injuries.

This case study looks at the concept of the Rendez-vous (RV) System.

### - FACTFILE - RENDEZ-VOUS (RV) SYSTEM

THE RV SYSTEM IS A METHOD OF PROVIDING PRE-HOSPITAL EMERGENCY MEDICAL CARE.

TWO SEPARATE EMERGENCY VEHICLES ARE ALERTED AND DISPATCHED TO AN INCIDENT SITE, EACH SETTING OFF FROM A DIFFERENT LOCATION.

AN AMBULANCE WITH AMBULANCE CREW, AND A SPECIAL VEHICLE WITH AN EMERGENCY DOCTOR MEET AT THE SITE AND WORK TOGETHER TO PROVIDE THE HIGHEST POSSIBLE LEVEL OF PRE-HOSPITAL CARE.



THE SYSTEM ALLOWS THE EMERGENCY DOCTOR TO BE FREE FOR OTHER EMERGENCIES AS SOON AS THE INITIAL, NECESSARY TREATMENT ON SITE HAS BEEN DONE AND THE PATIENT IS ON THE WAY TO AN ADEQUATELY EQUIPPED HOSPITAL OR TRAUMA CENTER.



European Transport Safety Council



IMPROVING POST-COLLISION  
RESPONSE AND EMERGENCY  
CARE IN EUROPE

## PROVIDING PRE-HOSPITAL EMERGENCY MEDICAL ASSISTANCE TO VICTIMS AT A ROAD TRAFFIC COLLISION SITE

Around 135,000 people were seriously injured on European roads in 2014 according to European Commission estimates, based on the MAIS 3+ standard definition of a serious injury.

All EMS aim to offer medical assistance to victims of road collisions as quickly as possible.<sup>1</sup> However, despite efforts across Europe to ensure a satisfactory distribution of well-staffed hospitals, trauma centres, and ambulance/helicopter bases, it is not always possible to cover all areas and stretches of road where collisions occur.

Deciding where ambulances should be located and how many of them should be deployed is an ongoing debate.<sup>2</sup> Similarly, the high demand for ambulances often means that ambulance drivers are routed to attend another incident directly from the hospital at which they previously handed over a patient for further treatment.<sup>3</sup>

Although in some countries (such as Germany) it is common to have more available ambulances than available emergency-doctor-staffed vehicles<sup>4</sup>, pre-hospital emergency care in the EU is almost always provided by emergency doctors (medical doctors).<sup>5</sup>

In such circumstances, the rendez-vous system comes in. It allows EMS to better exploit the resources available to them and helps to solve some of the logistical problems inherent in providing medical assistance at the scene of a collision.

IN **2014**  
**135,000**



**PEOPLE WERE  
SERIOUSLY  
INJURED ON  
EUROPEAN  
ROADS**

## HOW DOES THE RENDEZ-VOUS SYSTEM WORK?

Under the RV system a doctor arrives to the scene of a road collision in a rapid response vehicle with all the necessary equipment but no ability to transport the patient.<sup>6</sup> For the transportation, an ambulance arrives separately from a different location, staffed with emergency medical personnel such as a nurse (not an emergency doctor) and stretchers.

The system therefore relies on two vehicles (an ambulance and a special car designed and equipped specifically for an emergency doctor) that are alerted and dispatched to an incident site where they meet and provide joint assistance to those who are injured and/or in a critical condition. By driving a passenger car, the emergency doctor is highly-mobile and can arrive at a collision more quickly.



The emergency doctor might also use a vehicle suitable for use on difficult terrain, depending on the region/EMS in question. The ambulance vehicle should comply with CEN 1789 standard.

The emergency doctor does not work with one crew of a particular ambulance, instead, they work independently and drive their own car, in some cases alone, sometimes together with a driver.

The first mention of deployment of the RV system dates back to the late 1970s in Heidelberg, Germany. Since then, the system has spread to many other countries, including the Czech Republic, Austria and France.

<sup>1</sup> Reuter-Opperman, M. (2017), Logistics for Emergency Medical Service systems, p1.

<sup>2</sup> Ibid., p1.

<sup>3</sup> Reuter-Opperman, M. (2017), Logistics for Emergency Medical Service systems, p3.

<sup>4</sup> A Modified EMS System: Transport Ambulance. An Interactive Qualifying Project, p43, [goo.gl/E6kS9R](http://goo.gl/E6kS9R).

<sup>5</sup> Al-Shaqsi, S. (October 2010), Models of International Emergency Medical Service (EMS) Systems, Oman Medical Journal 2010, Volume 25, Issue 4, page 320, [goo.gl/FWkfui](http://goo.gl/FWkfui).

<sup>6</sup> A Modified EMS System: Transport Ambulance. An Interactive Qualifying Project, pp. 43-44, [goo.gl/E6kS9R](http://goo.gl/E6kS9R).

## HOW DOES THE RV SYSTEM VARY IN DIFFERENT CONTEXTS?

Some countries use the RV system more often than others, and sometimes it is used only in certain regions. The introduction and modification of the system depends on the territory covered by the particular EMS provider, the vehicles and resources available and the education and training of staff.

Although the RV system is commonly used for road collisions, it can be used for a large variety of other incident types and specific health emergency situations.

## WHAT CRITERIA NEED TO BE MET IN ORDER TO IMPLEMENT THE RV SYSTEM?

To function efficiently, EMS providers need to have a sound knowledge of the current deployment of both ambulances and RV vehicles across their territory. Knowing the exact location of all vehicles in the system at all times allows the EMS operator to assign the nearest appropriate emergency workers - both an emergency doctor and an ambulance - thus guaranteeing the quick and efficient provision of adequate care to those in need.

Fortunately, evidence shows that even if EMS are not operating a RV system, it is common to dispatch the closest available medical emergency vehicle, and knowing the exact position of available vehicles is common. Therefore, implementing a RV system should be a possibility for most EMS providers.

## HOW DOES THE RV SYSTEM FUNCTION IN DIFFERENT ROAD COLLISION SCENARIOS?

### 1 COLLISION WITH MINOR INJURIES

Some collisions result in only minor injuries and do not require the highest possible level of care provided by an emergency doctor. These patients can be transported to a medical facility for further treatment. In such cases, an ambulance staffed with other emergency personnel may be dispatched to attend the site, but an emergency doctor is not deployed. For the ambulance crew, it is perfectly feasible to act alone in such scenarios. As a result, the emergency doctor is available should there be another incident at the same time requiring their intervention.



### 2 COLLISION WITH NO OR LIGHT INJURY ONLY

Sometimes there is no need for a road user to be transported to a medical facility following a collision, as there may be no, or only light injuries. If the injuries are treatable on the spot then it may be an emergency doctor (especially if they happen to be near the incident site) who will assess the patient. In that case, an ambulance is not called to the scene given that the patient is in a condition that allows them to be released.



### 3 IF WHAT SEEMED LIKE A MINOR INJURY DETERIORATES

If the condition of a patient who is being assessed and treated by an ambulance crew suddenly deteriorates, the ambulance crew can call an emergency doctor working in the RV system. The emergency doctor, driving a passenger car, is able to reach the incident site within a very short time frame to help assist the ambulance crew.



## 4 SERIOUS COLLISION WITH SERIOUS INJURY

If the road collision results in such serious injuries that an intervention of an emergency doctor is deemed necessary when the EMS is first alerted, an ambulance vehicle is dispatched, and an emergency doctor is alerted at the same time. They then meet at the scene and provide all the necessary care to the patient concerned.

Once the patient is stabilised, they can be transported by the ambulance to the hospital. At this point, the emergency doctor has finished the necessary intervention and, unless they are needed to accompany the patient in the ambulance to the hospital, they are free to be called to another incident if needed.



*By allowing emergency doctors to work independently of ambulance vehicle crews, the RV system allows more efficient use of the human resources currently available within the EMS.*

### WHAT ARE THE BENEFITS OF THE RV SYSTEM?



Ambulance crews and emergency doctors can work independently. A smaller number of emergency doctors is able to deal with many incidents.



Time is saved as emergency doctors are not using as much time driving between hospitals and incident sites. They can focus on those collisions where they are most needed.



Operating in a smaller vehicle allows the emergency doctor to be highly mobile, leading to shorter arrival times.

.....

If functioning properly, the RV system can guarantee the same level of care as the regular EMS, while saving time and maximising resources. Evidence shows that countries with a long tradition of using the RV system were capable of operating with up to 50% fewer emergency doctors on duty (while maintaining the same level of pre-hospital care), when compared with countries without the RV system that use ambulances staffed with both regular ambulance staff and an emergency doctor.

The RV system can help solve the problem of a shortage of emergency doctors. Similarly, any ambulance located in close proximity to a road collision can be alerted by the dispatch centre and sent to the incident site, even if it was on its way to another, less urgent incident.

Given the many similarities between European EMS, the RV system would appear to be the type of measure that could be easily implemented across Europe.