

# Medical Rescue Services in Germany



## A: Structure of the emergency system

1. How is organizational structure of the emergency response in your country?
  - Do you have regional dispatch centres?
  - Do you have local emergency units
  - Is there a law defining the responsibilities and tasks?
2. Which organisations are part of the emergency response services? (e.g. Emergency care Providers, Red Cross.... Private Companies, public services, fire brigades)
3. In the context of the transport of the persons: ,Do you make a difference between the transport of sick persons and the emergency service which includes also transport of a person with life threatening problems?
4. How do you calculate the location of emergency services and dispatch centers
  - is it based on the Number of inhabitants in a certain area?
  - Is it based on a response time that has to be achieved?
  - is it calculated also in relation with the traffic density?
  - On the distance to hospitals?
  - is the demand calculated, are there demand plans?
5. Are there guidelines for the response to road collisions
6. Are there guidelines/standards for the communication with the emergency staff
7. Are there guidelines/standards for the communication infrastructure or technology
8. Does the computer based support technology of the dispatch centre include: reception of calls, alarming emergency staff, support of the operation, documentation, further documentation, administration/statistics/controlling, technical (system) administration
9. Is the reception of eCall calls guaranteed / is the necessary technological infrastructure in place?

## A: Structure of the emergency system

1- How is organizational structure of the emergency response in your country?



In Germany Medical Rescue Services are not regulated by law of the central government. Every of the 16 Federal States has his own system of organising, financing and define framework in his own law.

## A: Structure of the emergency system

1- How is organizational structure of the emergency response in your country?

In Germany there is not „one existing system“ there are at least 16 different systems, may be some more, because some Federal States get the Citys and Counties more ore less „free hand“, to organise the Rescue Services

But... there can be considert three general Situations

## A: Structure of the emergency system

1- How is organizational structure of the emergency response in your country?

Service is provided by the public Authority itself

Subclause:  
A special Organisation is build for the service,

Subclause:  
The Firebrigade is operating rescue Services

Service is provided by non government Organisations

Service is provided by non government Organisations and Private Companys

And of course..a mix of all

Hopitals are not a part of rescue Service i.g. except the organisation of medical doctors on scene

## A: Structure of the emergency system

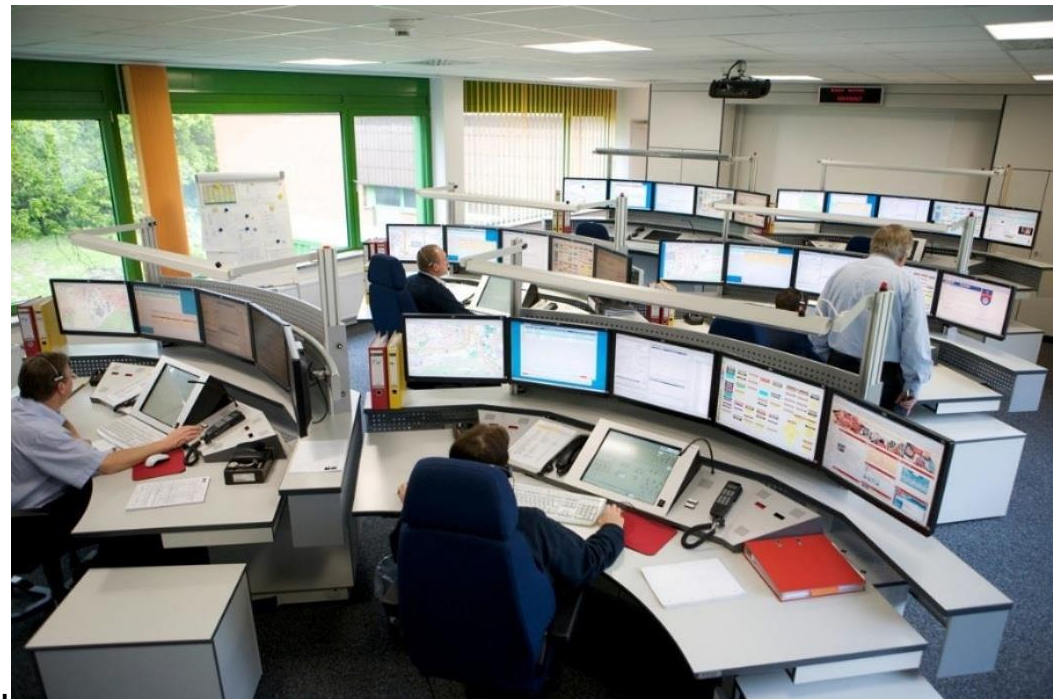
### 1 -Do you have regional dispatch centers?

As said the structure of Rescue Services is also the same situation of dispatch centers:

Some are provided by the public authority, some by fire brigades and some by Non Government Organizations, very often by the German Red Cross.

A few of them are operated in cooperation (but not as an combined unit) with police departments.

(Technical units, personal and operational separated but with close ways to cooperate)



## A: Structure of the emergency system

1- How is organizational structure of the emergency response in your country?

**Medical Health Care Services in Germany are generally divided in**

**Emergency Rescue Service and Public Ambulance Service**

(CPV Code 75252000)

(CPV Code 85143000-3)

**Emergency Rescue Service include:**

**Quick Response and  
Emergency Services with  
Road Ambulances**

**Air Rescue Services  
with Helicopters**

**Emergency Doctor Service**



# A: Structure of the emergency system

1- How is organizational structure of the emergency response in your country?



**Additional**

**Interhospital Transport – emergency Patients**



**Biohazardous Patients treatment**





## A: Structure of the emergency system

### 1 -Is there a law defining the responsibilities and tasks?

In Germany the different laws defining “rescue services” as a public affair. Federal structure does not allow a general nationwide rule, how the service is practical organised.



# A: Structure of the emergency system

2-which organisations are part of the emergency response services? (e.g. Emergency care Providers, Red Cross....Private Companies, public services. fire brigades?)



**Deutsches Rotes Kreuz**

*Aus Liebe zum Menschen.*



**Arbeiter-Samariter-Bund**

**DIE JOHANNITER**



**Aus Liebe zum Leben**



**Malteser**

**... weil Nähe zählt.**  
Examples



**BERLINER FEUERWEHR**



## A: Structure of the emergency system

3 -In the context of the transport of the persons: „Do you make a difference between the transport of sick persons and the emergency service which includes also transport of a person with life threatening problems?

No



# A: Structure of the emergency system

-4. How do you calculate the location of emergency services and dispatch centers?

*Rettungsdienst*

Sample  
 "Rheinland-Pfalz"



## A: Structure of the emergency system

-4. How do you calculate the location of emergency services and dispatch centers?



### Legende

- ▲ Integrierte Leitstellen
- Rettungsleitstellen
- Rettungswachen
- Lehrrettungswachen
- Ⓜ Rettungshubschrauber
- Notarztstandorte
- ▣ Notarztstandorte (temporär)
- ⊕ Notfallmedizinische Zentren

## A: Structure of the emergency system Situation of Dispatch Centers

Generally all Emergency Dispatch centers receipt the „112“ European Emergency Call



There is a national second call „110“, which is receipted by Police Dispatch Centers



## A: Structure of the emergency system

### -4. How do you calculate the location of dispatch centers?

The minimum area a dispatch center is responsible for is a city, the maximum a whole Federal State.

Common rules to calculate and locate dispatch centers do not exist.

An equality to the inhabitants is not given!

## A: Structure of the emergency system

### -4. How do you calculate the location of emergency services?

Generally the mostly used planning parameter is the response time (in German “Hilfsfrist”). The response time is between 12 and 15 minutes, some legal definitions include the time for the incoming call and the dispatching period, some exclude it. The Time frame ends with arriving on scene

If there are in one area more risks, for example because there are Highways, Industry, lot of inhabitants, hospitals etc., the available units have to raise up, until the planning benchmark can be achieved.

In general the planings is documented in demand plans, which have to be controlled periodically



## A: Structure of the emergency system

### -5 Are there guidelines for the response to road collisions?

There are no special guidelines for the response to road collisions

### -6 Are there guidelines/standards for the communication with the emergency staff?

There are no special guidelines

### -7 Are there guidelines/standards for the communication infrastructure or technology?

There are no special guidelines

### -8 Computer based support of Dispatch Centers?

Generally computer technology is used in every dispatch center, but not equal ore unique. There is no obligation to be interoperational with other dispatch centers. In General computer technology provides reception of calls, alarming emergency staff, support of the operation, documentation, further documentation, administration/statistics/controlling, technical (system) administration. But also Maps, Fleetcontroll and special information sources



## A: Structure of the emergency system

-9 Is the reception of eCall calls guaranteed / is the necessary technological infrastructure in place?

Not in every Dispatch center, the direct reception of eCall is actually guaranteed, some of them need assistance of car manufacturers call center.

Most Dispatch centers have a planning to achieve the european eCall target.



## **B: Availability of vehicles/staff and equipment**

1. **What type of Vehicles are available to suit the demand**
2. **Does the emergency service apply the rendezvous system?**
3. **Do the vehicles fulfil EN 1789 standards?**
4. **The calculation for the demand of vehicles (different types of ambulances, emergency doctors vehicle) is based on what kind of criteria?**
5. **Concerning the staff: How is it qualified?**
  - Do volunteers receive training?**
  - Is there a curriculum for emergency staff?**
  - Is there Advanced Trauma Life support training (ATLS) given to the staff**
  - Do ambulance/fire brigade drivers receive specific road safety (driving) training=**
  - What persons are available. Emergency doctors, Paramedics, Nurses, Emergency qualified staff**

## B: Availability of vehicles/staff and equipment

### 1. What type of Vehicles are available to suit the demand

-In Germany the Type C Ambulance is prevail for Emergency Missions, some regions also use type B Ambulances. Medical transport services (no Emergency) use Type A2 Ambulances, Type A1 Ambulances are not used in Germany.

Rescue Helicopters (HEMS) take place at air rescue services; Fixed wing Aircrafts are not in use. Emergency doctor cars are used for rendezvous Systems in combination with the Emergency Ambulances. Special Units are for example Adiposity Emergency Vehicles, prenatal rescue units, interhospital intensive care units....

### 2. Does the emergency service apply the rendezvous system?

-At most places the Rendezvous system is established

### 3. Do the vehicles fulfil EN 1789 standards?

- In Germany all Emergency Vehicles have to fulfil the „Standard of the Technic“, that's in general the EN 1789, but not strictly necessary  
Emergency Doctor Cars have to fulfil a national Standard (DIN 75079)  
HEMS (Helicopters for Emergency Service) have to fulfil  
EN 13230 an EN 13718

## B: Availability of vehicles/staff and equipment

4. The calculation for the demand of vehicles (different types of ambulances, emergency doctors vehicle) is based on what kind of criteria?

- retrospective statistic data allow to calculate, how often in a time frame the service will be used. This allows prospective planning's in accordance to the planning guidelines (see also at A.4 legal response time)

Duplicities have to be on view, if there are in truth or calculated more operations than can be covered, the capacities have to be adapted on the demand



## **B: Availability of vehicles/staff and equipment**

### **5. Concerning the staff**

How is it qualified?

The staff qualification is also regulated different in every federal state law, only the qualification of „Notfallsanitäter“ (NotSan) is regulated in nation wide law.

Emergency Doctors are specially trained after become medicals specialist called „Medical Knowledge Emergency Medicine“

„Notfallsanitäter“ is the highest grade of paramedical education in Germany. Since 2015 , the 3 year training is established. The education includes, schooling, in service education and clinical education in Hospitals

Before 2015 the highest Qualification was „Rettungsassistent“ (RA), the training was two years, one year schooling and clinical education and one year in service education

## B: Availability of vehicles/staff and equipment

### 5. Concerning the staff

Drivers normally are qualified as „Rettungssanitäter“(RS), this means a training in 4 steps total 520 h: 160 h schooling, 160 h clinical education, 160 h in service education and 40 h examination week

Most federal states permit „Rettungssanitäter“ to be driver of Type C, Type B and Type A Ambulances and emergency Doctors car

In some federal states „Rettungssanitäter“ are allowed to take care of patients transported in Type A Ambulances

	Type A Ambulance	Type B and C Ambulances	Emergency Doctors car
Driver	RH/RS	RH/RS	RS/RA/NotSan
Patients treatment	RS	RA/NotSan	
Emergency medical Doctor	--	EMD Rendezvous	EMD

## B: Availability of vehicles/staff and equipment

### 5. Concerning the staff



### How is it qualified?

## Helicopter Emergency Medical Services (HEMS)

All services are operated with minimum one Pilot in Command, sometimes with a second pilot and a aircraft-technician/and ore winch operator. If the Helicopter is operated only with one pilot, the “RA” or “NotSan” is the second HEMS Crew Member, who asissts the Pilot to operate the radio, navigation by sight and observe the pre take off procedure. They are additional specially trained, in general by the operator oft the HEMS service



## Air Rescue Services by Helicopter

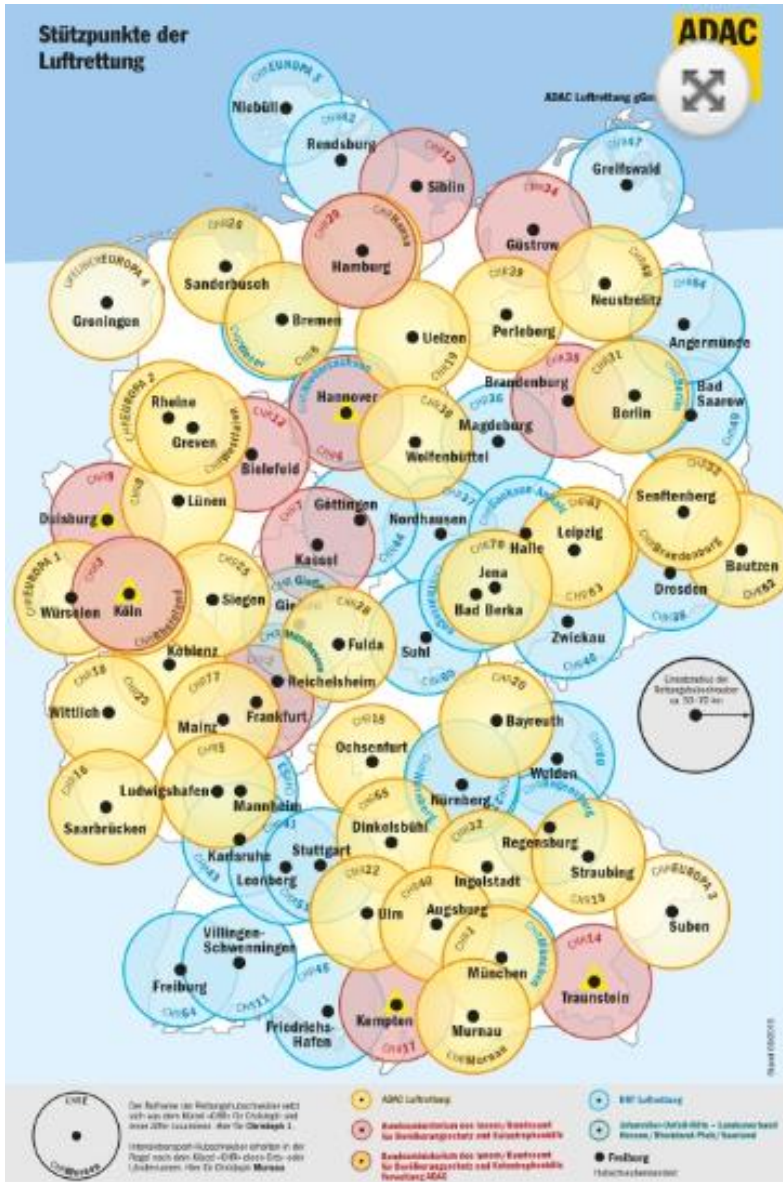
HEMS are manned with

	HEMS Daylight Use	HEMS Day and Night Service	Dual use HEMS / Interhospital Transfer	HEMS with winch
Pilot	Pilot	Pilot	Pilot	Pilot
2nd HEMS Member	RA/NotSan	Pilot/Technician	Pilot/Technician	Winch Operator
Patient Treatment	RA/NotSan	RA/NotSan	RA/NotSan	RA/NotSan
Emergency medical doctor	EMD	EMD	EMD Rendezvous	EMD

The Staff umfasst minimum one Pilot, (at some stations are 2 Pilots in Service)

Stations with winches have an air technician /winch operator. If there is only one Airman in Service, the Emergency Staff Technician is also HEMS Crew member and assists the Pilot to navigate and use the radio. He is also responsible for the pre start check outside the Helicopter. Medical Doctors are general in service on Rescue Helicopters.

# Air Rescue Services by Helicopter



**55 HEMS**  
**16 Inter Hospital Transport Helicopter**  
**11 Dual Use Helicopters**  
**6 SAR (Military Search and Rescue)**

Air rescue Services are in general available all over Germany with a radius of maximum 50 km radius.

Some Air Rescue Services are specialised to transport intensive care patients between hospitals. A lot of these stations allow services 24/7

Most air rescue stations are on service from sunrise to sunset

## **B: Availability of vehicles/staff and equipment**

### **5. Concerning the staff**

#### **Do volunteers receive training?**

Volunteers in Emergency Services are generally engaged to have the same qualifications as the salaried employees

In some federal States it is enabled for volunteers to drive heavy cars of emergency services without a driving licence class C

#### **Is there a curriculum for emergency staff?**

See the Answer to question above

#### **Is there Advanced Trauma Life support training (ATLS) given to the staff**

ATLS Training is the “gold standard” but there is no obligation to graduate such a training, not for the staff nor for the company to get a licence

## **B: Availability of vehicles/staff and equipment**

### **5. Concerning the staff**

#### **Do ambulance/fire brigade drivers receive specific road safety (driving) training**

Drivers training is not obligate, most company's train the drivers. DVR established a Simulated training for drivers of emergency vehicles, more and more fire brigades and emergency services use this trainings, because emergency missions could not be trained in public traffic without high risks.

#### **What persons are available.**

Emergency doctors, (Emergency Doctors are specially trained after become medicals specialist called „Medical Knowledge Emergency Medicine“)

Emergency qualified staff see above

## **C: Emergency service given to the victim on the spot**

1. First Aid Training of the general population: compulsory to obtain the driving licence
2. How is the syllabus of the first aid training
3. Are there specific traffic rules for Emergency vehicles to arrive fast to the spot  
(Alarm sound. Obligation to form a corridor for emergency Vehicles etc.
4. How is the financing of the emergency system organized

## C: Emergency service given to the victim on the spot

### 1 First Aid Training of the general population: compulsory to obtain the driving licence

Every driver is constrained to pass a First Aid) training(9 x 45 Minutes, before getting the driving licence.

There is no obligation to repeat the training.

### 2 How is the syllabus of the first aid training

- Right act at the spot (Right steps for Patients Treatment/
  - First Aid- How to safeguard the scene
  - how to take an correct emergency call
  - How to act unconscious patients – recovery position, -
  - taking off helmets
  - CPR cardio pulmonale resuscitation
  - Right acting heart attacks
  - How to stop critical bleeding
- (C) (Catastrophic haemorrhage control)**  
**A - Airway**  
**B - Breathing**  
**C - Circulation**  
**D - Disability**  
**E - Exposure/Environment**

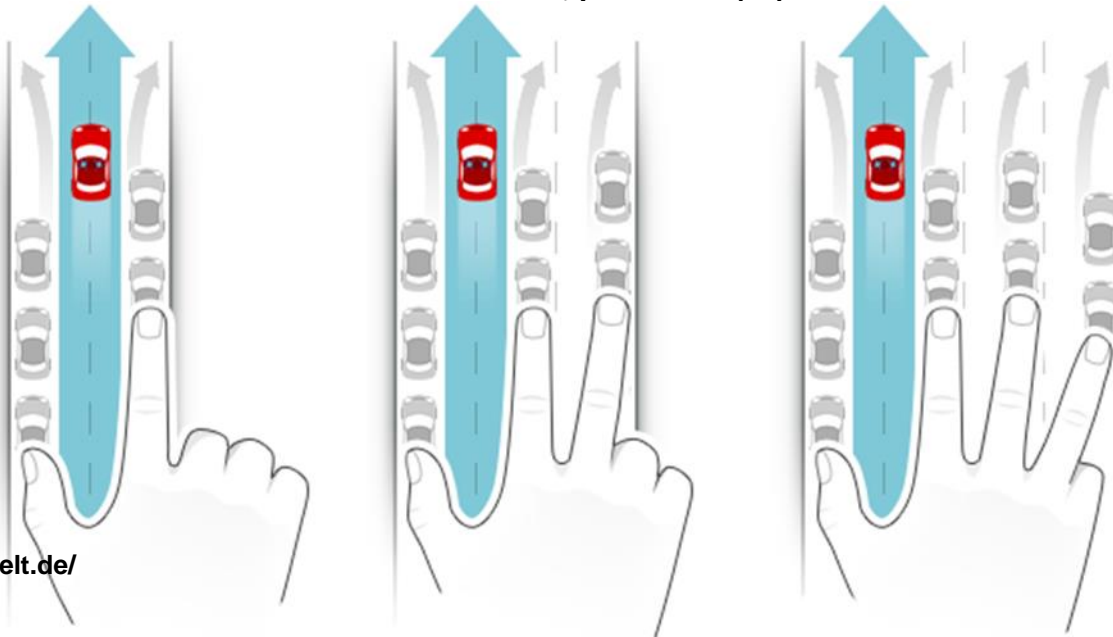
- Are there specific traffic rules for Emergency éhicles to arrive faste to the spot (Alarm sound. Obligation to form a corridor for emergency Vehicles etc.

## C: Emergency service given to the victim on the spot

3 Are there specific traffic rules for Emergency vehicles to arrive fast to the spot  
(Alarm sound. Obligation to form a corridor for emergency vehicles etc.)

Emergency vehicles are equipped with „blue lights“ in the most directions of the car  
a alarm sound system which is equal for firefighters, police and ambulances  
German law allocates other car drivers give immediately free way when blue light  
and alarm sound is switched on

On Highways and out of citys a corridor has to be build, if the traffic slow down.  
The corridor has to be build between the right lane(s) and the left lane



## C: Emergency service given to the victim on the spot

### 4 How is the financing of the emergency system organized?

- In general the emergency systems have different financing models:

Most common is, that the health insurance companies pay for the operations in some states, insurance companies pay the full cost, including the costs of emergency services, dispatch centers, emergency vehicles

In other states, they have to pay only some costs, the gap is financed by taxpayers money or donations

- Generally: **Money is tight**

No bigger evolution in vehicle research....ergonomics, ecological, safety,

No bigger evolution in interconnecting call centers-ambulance vehicle- hospitals

- No car to car or car to infrastructure processes
- Difficult outcome research, we think, we do a good job, but we don't have evidence



## 4. What else to say?

### **The actual revision of EN 1789 has supplied evidence:**

EU Framework Directive 2007/46 EG (EU Type Approval Directive) links to EN 1789 as far the safety of the „Patients Compartment“ is meant.

Some Companies in Europe ask for exclude crash tests of the full patients compartment. Full Body crash tests with Ambulance Vehicles are expensive and there exist a lot of different design and types of vehicle.

But: Strangeness of the different vehicles body are different, so it is a need for crash the different types of cars with its specific interior.

EU directive guides, that the production of small series is the exception.

But a lot of companies all over Europe made a „single technical report“ instead a two Step Type approval.

EN 1789 and EU Framework directive have to be linked close and accurate, to raise the safety of road ambulances

## 4. What else to say?

### Accidents with Ambulance Vehicles

Ambulance Vehicles (but also from Police and Firebrigades) have very high risks of accidents. There is less research about the circumstances and prevention

Drivers are not obligatory good prepared for the heavy and dangerous job.

Dangerous for staff and patient!

Dangerous for traffic participants!

Dangerous for Every one of us!

Lets discuss: Is a special Driving license is needed to drive a Emergency vehicle?

Ambulance vehicle must have the possibility to interact with road infrastructure, for example traffic lights

Accidents with Emergency vehicles must be investigated in terms of prevention and develop safety (as in Norway done) as a part of a risk management process (that does not mean the investigation of police etc.)



## 4. What else to say?

Are Rescue Services public affairs or part of the health market for everyone who wants to participate?

## Danke für Ihre Aufmerksamkeit



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