= Ambulance =

An ambulance is a vehicle for transportation of sick or injured people to , from or between places of treatment for an illness or injury , and in some instances will also provide out of hospital medical care to the patient . The word is often associated with road going emergency ambulances which form part of an emergency medical service , administering emergency care to those with acute medical problems .

The term ambulance does , however , extend to a wider range of vehicles other than those with flashing warning lights and sirens . The term also includes a large number of non @-@ urgent ambulances which are for transport of patients without an urgent acute condition (see below : Functional types) and a wide range of urgent and non @-@ urgent vehicles including trucks , vans , bicycles , motorbikes , station wagons , buses , helicopters , fixed @-@ wing aircraft , boats , and even hospital ships (see below : Vehicle types) .

The term ambulance comes from the Latin word " ambulare " as meaning " to walk or move about " which is a reference to early medical care where patients were moved by lifting or wheeling . The word originally meant a moving hospital , which follows an army in its movements . During the American Civil War vehicles for conveying the wounded off the field of battle were called ambulance wagons . Field hospitals were still called ambulances during the Franco @-@ Prussian War of 1870 and in the Serbo @-@ Turkish war of 1876 even though the wagons were first referred to as ambulances about 1854 during the Crimean War .

There are other types of ambulance , with the most common being the patient transport ambulance (sometimes called an ambulette) . These vehicles are not usually (although there are exceptions) equipped with life @-@ support equipment , and are usually crewed by staff with fewer qualifications than the crew of emergency ambulances . Their purpose is simply to transport patients to , from or between places of treatment . In most countries , these are not equipped with flashing lights or sirens . In some jurisdictions there is a modified form of the ambulance used , that only carries one member of ambulance crew to the scene to provide care , but is not used to transport the patient . Such vehicles are called fly @-@ cars . In these cases a patient who requires transportation to hospital will require a patient @-@ carrying ambulance to attend in addition to the fast responder .

= = History = =

The history of the ambulance begins in ancient times , with the use of carts to transport incurable patients by force . Ambulances were first used for emergency transport in 1487 by the Spanish , and civilian variants were put into operation during the 1830s . Advances in technology throughout the 19th and 20th centuries led to the modern self @-@ powered ambulances .

= = Functional types = =

Ambulances can be grouped into types depending on whether or not they transport patients , and under what conditions . In some cases , ambulances may fulfil more than one function (such as combining emergency ambulance care with patient transport) .

Emergency ambulance ? The most common type of ambulance , which provide care to patients with an acute illness or injury . These can be road @-@ going vans , boats , helicopters , fixed @-@ wing aircraft (known as air ambulances) or even converted vehicles such as golf carts .

Patient transport ambulance ? A vehicle , which has the job of transporting patients to , from or between places of medical treatment , such as hospital or dialysis center , for non @-@ urgent care . These can be vans , buses or other vehicles .

Response unit ? Also known as a fly @-@ car or a [Quick Response Vehicle] , which is a vehicle which is used to reach an acutely ill patient quickly , and provide on scene care , but lacks the capacity to transport the patient from the scene . Response units may be backed up by an emergency ambulance which can transport the patient , or may deal with the problem on scene , with no requirement for a transport ambulance . These can be a wide variety of vehicles , from

standard cars , to modified vans , motorcycles , pedal cycles , quad bikes or horses . These units can function as a vehicle for officers or supervisors (similar to a fire chief 's vehicle , but for ambulance services) . Fire & Rescue services in North America often staff EMTs or Paramedics to their apparatuses to provide medical care without the need to wait for an ambulance .

Charity ambulance ? A special type of patient transport ambulance is provided by a charity for the purpose of taking sick children or adults on trips or vacations away from hospitals , hospices or care homes where they are in long term care . Examples include the United Kingdom 's ' Jumbulance ' project . These are usually based on a bus .

Bariatric ambulance ? A special type of patient transport ambulance designed for extremely obese patients equipped with the appropriate tools to move and manage these patients .

= = Vehicle types = =

In the US , there are four types of ambulances . There are Type I , Type II , Type III and Type IV . Type I is based upon a heavy truck chassis and is used primarily for Advanced Life Support and rescue work . Type II is a van based ambulance with little modifications except for a raised roof . Its use is for basic life support and transfer of patients . The Type III is a van chassis but with a custom made rear compartment and has the same use as Type I ambulances . Type IV 's are nomenclature for smaller ad hoc patient transfer using smaller utility vehicles where passenger vehicles and trucks would have difficulty in traversing , such as large industrial complexes , commercial venues , and special events with large crowds . These do not , generally , fall under Federal Regulations .

Ambulances can be based on many types of vehicle , although emergency and disaster conditions may lead to other vehicles serving as makeshift ambulances :

Van or pickup truck ? A typical ambulance is based on either the chassis of a van (vanbulance) or pickup truck . This chassis is then modified to the designs and specifications of the purchaser .

Car / SUV ? Used either as a fly @-@ car for rapid response or for patients who can sit , these are standard car models adapted to the requirements of the service using them . Some cars are capable of taking a stretcher with a recumbent patient , but this often requires the removal of the front passenger seat , or the use of a particularly long car . This was often the case with early ambulances , which were converted (or even serving) hearses , as these were some of the few vehicles able to accept a human body in a supine position .

Motorcycle ? In developed areas , these are used for rapid response in an emergency as they can travel through heavy traffic much faster than a car or van . Trailers or sidecars can make these patient transporting units . See also motorcycle ambulance .

Bicycle ? Used for response , but usually in pedestrian @-@ only areas where large vehicles find access difficult . Like the motorcycle ambulance , a bicycle may be connected to a trailer for patient transport , most often in the developing world . See also cycle responder .

All @-@ terrain vehicle (ATV) ? for example quad bikes ; these are used for response off road , especially at events . ATVs can be modified to carry a stretcher , and are used for tasks such as mountain rescue in inaccessible areas .

Golf cart or Neighborhood Electric Vehicle ? Used for rapid response at events or on campuses . These function similarly to ATVs , with less rough terrain capability , but with less noise .

Helicopter ? Usually used for emergency care , either in places inaccessible by road , or in areas where speed is of the essence , as they are able to travel significantly faster than a road ambulance . Helicopter and fixed @-@ wing ambulances are discussed in greater detail at air ambulance .

Fixed @-@ wing aircraft ? These can be used for either acute emergency care in remote areas (such as in Australia , with the ' Flying Doctors ') , for patient transport over long distances (e.g. a re @-@ patriation following an illness or injury in a foreign country) , or transportation between distant hospitals . Helicopter and fixed @-@ wing ambulances are discussed in greater detail at air ambulance .

Boat ? Boats can be used to serve as ambulances , especially in island areas or in areas with a large number of canals , such as the Venetian water ambulances . Some lifeboats or lifeguard vessels may fit the description of an ambulance as they are used to transport a casualty .

Ship ? Ships can be used as hospital ships , mostly operated by national military services , although some ships are operated by charities . They can meet the definition of ambulances as they provide transport to the sick and wounded (along with treatment) . They are often sent to disaster or war zones to provide care for the casualties of these events .

Bus ? In some cases , buses can be used for multiple casualty transport , either for the purposes of taking patients on journeys , in the context of major incidents , or to deal with specific problems such as drunken patients in town centres . Ambulance busses are discussed at greater length in their own article .

Trailer ? In some instances a trailer , which can be towed behind a self @-@ propelled vehicle can be used . This permits flexibility in areas with minimal access to vehicles , such as on small islands .

Horse and cart ? Especially in developing world areas , more traditional methods of transport include transport such as horse and cart , used in much the same way as motorcycle or bicycle stretcher units to transport to a local clinic .

Hospital train ? Early hospital trains functioned to carry large numbers of wounded soldiers . Similar to other ambulance types , as Western medicine developed , hospital trains gained the ability to provide treatment . In some rural locations , hospital trains now function as mobile hospitals , traveling by rail from one location to the next , then parking on a siding to provide hospital services to the local population . Hospital trains also find use in disaster response

Fire Engine - Fire services (especially in North America) often train Firefighters in emergency medicine and most apparatuses carry at least basic medical supplies . By design , apparatuses cannot transport patients .

= = = Vehicle type gallery = = =

= = Design and construction = =

Ambulance design must take into account local conditions and infrastructure . Maintained roads are necessary for road going ambulances to arrive on scene and then transport the patient to a hospital , though in rugged areas four @-@ wheel drive or all @-@ terrain vehicles can be used . Fuel must be available and service facilities are necessary to maintain the vehicle .

Methods of summoning (e.g. telephone) and dispatching ambulances usually rely on electronic equipment , which itself often relies on an intact power grid . Similarly , modern ambulances are equipped with two @-@ way radios or cellular telephones to enable them to contact hospitals , either to notify the appropriate hospital of the ambulance 's pending arrival , or , in cases where physicians do not form part of the ambulance 's crew , to confer with a physician for medical oversight .

Ambulances often have two manufacturers . The first is frequently a manufacturer of light trucks or full @-@ size vans (or previously , cars) such as Mercedes @-@ Benz , Nissan , Toyota , or Ford . The second manufacturer (known as second stage manufacturer) purchases the vehicle (which is sometimes purchased incomplete , having no body or interior behind the driver 's seat) and turns it into an ambulance by adding bodywork , emergency vehicle equipment , and interior fittings . This is done by one of two methods ? either coachbuilding , where the modifications are started from scratch and built on to the vehicle , or using a modular system , where a pre @-@ built ' box ' is put on to the empty chassis of the ambulance , and then finished off .

Modern ambulances are typically powered by internal combustion engines , which can be powered by any conventional fuel , including diesel , gasoline or liquefied petroleum gas , depending on the preference of the operator and the availability of different options . Colder regions often use gasoline powered engines , as diesels can be difficult to start when they are cold . Warmer regions may favor diesel engines , as they are thought to be more efficient and more durable . Diesel power is sometimes chosen due to safety concerns , after a series of fires involving gasoline powered ambulances during the 1980s . These fires were ultimately attributed in part to gasoline 's higher volatility in comparison to diesel fuel . The type of engine may be determined by the manufacturer :

in the past two decades , Ford would only sell vehicles for ambulance conversion if they are diesel powered . Beginning in 2010 , Ford will sell its ambulance chassis with a gasoline engine in order to meet emissions requirements .

= = = Standards = = =

Many regions have prescribed standards which ambulances should , or must , meet in order to be used for their role . These standards may have different levels which reflect the type of patient which the ambulance is expected to transport (for instance specifying a different standard for routine patient transport than high dependency) , or may base standards on the size of vehicle .

For instance , in Europe , the European Committee for Standardization publishes the standard CEN 1789 , which specifies minimum compliance levels across the build of ambulance , including crash resistance , equipment levels , and exterior marking . In the United States , standards for ambulance design have existed since 1976 , where the standard is published by the General Services Administration and known as KKK @-@ 1822 @-@ A. This standard has been revised several times , and is currently in version ' F ' , known as KKK @-@ 1822 @-@ F , although not all states have adopted this version . The National Fire Protection Association has also published a design standard , NFPA 1917 , which some administrations are considering switching to when KKK @-@ 1822 is withdrawn in 2015 .

The move towards standardisation is now reaching countries without a history of prescriptive codes , such as India , which approved its first national standard for ambulance construction in 2013 .

= = = Safety = = =

Ambulances , like other emergency vehicles , are required to operate in all weather conditions , including those during which civilian drivers often elect to stay off the road . Also , the ambulance crew 's responsibilities to their patient often preclude their use of safety devices such as seat belts . Research has shown that ambulances are more likely to be involved in motor vehicle collisions resulting in injury or death than either fire trucks or police cars . Unrestrained occupants , particularly those riding in the patient @-@ care compartment , are particularly vulnerable . When compared to civilian vehicles of similar size , one study found that on a per @-@ accident basis , ambulance collisions tend to involve more people , and result in more injuries . An 11 @-@ year retrospective study concluded in 2001 found that although most fatal ambulance crashes occurred during emergency runs , they typically occurred on improved , straight , dry roads , during clear weather . Furthermore , paramedics are also at risk in ambulances while helping patients , as 27 paramedics died during ambulance trips in the US between 1991 and 2006 .

= = = Equipment = = =

In addition to the equipment directly used for the treatment of patients , ambulances may be fitted with a range of additional equipment which is used in order to facilitate patient care . This could include :

Two @-@ way radio ? One of the most important pieces of equipment in modern emergency medical services as it allows for the issuing of jobs to the ambulance , and can allow the crew to pass information back to control or to the hospital (for example a priority ASHICE message to alert the hospital of the impending arrival of a critical patient .) More recently many services worldwide have moved from traditional analog UHF / VHF sets , which can be monitored externally , to more secure digital systems , such as those working on a GSM system , such as TETRA .

Mobile data terminal ? Some ambulances are fitted with Mobile data terminals (or MDTs) , which are connected wirelessly to a central computer , usually at the control center . These terminals can function instead of or alongside the two @-@ way radio and can be used to pass details of jobs to the crew , and can log the time the crew was mobile to a patient , arrived , and left scene , or fulfill any other computer based function .

Evidence gathering CCTV ? Some ambulances are now being fitted with video cameras used to record activity either inside or outside the vehicle . They may also be fitted with sound recording facilities . This can be used as a form of protection from violence against ambulance crews , or in some cases (dependent on local laws) to prove or disprove cases where a member of crew stands accused of malpractice .

Tail lift or ramp ? Ambulances can be fitted with a tail lift or ramp in order to facilitate loading a patient without having to undertake any lifting . This is especially important where the patient is obese or specialty care transports that require large , bulky equipment such as a neonatal incubator or hospital beds . There may also be equipment linked to this such as winches which are designed to pull heavy patients into the vehicle .

Trauma lighting ? In addition to normal working lighting , ambulances can be fitted with special lighting (often blue or red) which is used when the patient becomes photosensitive .

Air conditioning ? Ambulances are often fitted with a separate air conditioning system to serve the working area from that which serves the cab . This helps to maintain an appropriate temperature for any patients being treated , but may also feature additional features such as filtering against airborne pathogens .

Data Recorders ? These are often placed in ambulances to record such information as speed , braking power and time , activation of active emergency warnings such as lights and sirens , as well as seat belt usage . These are often used in coordination with GPS units .

= = = Intermediate technology = = =

In parts of the world which lack a high level of infrastructure , ambulances are designed to meet local conditions , being built using intermediate technology . Ambulances can also be trailers , which are pulled by bicycles , motorcycles , tractors , or animals . Animal @-@ powered ambulances can be particularly useful in regions that are subject to flooding . Motorcycles fitted with sidecars (or motorcycle ambulances) are also used , though they are subject to some of the same limitations as more traditional over @-@ the @-@ road ambulances . The level of care provided by these ambulances varies between merely providing transport to a medical clinic to providing on @-@ scene and continuing care during transport .

The design of intermediate technology ambulances must take into account not only the operation and maintenance of the ambulance , but its construction as well . The robustness of the design becomes more important , as does the nature of the skills required to properly operate the vehicle . Cost @-@ effectiveness can be a high priority .

= = Appearance and markings = =

Emergency ambulances are highly likely to be involved in hazardous situations , including incidents such as a road traffic collision , as these emergencies create people who are likely to be in need of treatment . They are required to gain access to patients as quickly as possible , and in many countries , are given dispensation from obeying certain traffic laws . For instance , they may be able to treat a red traffic light or stop sign as a yield sign (' give way ') , or be permitted to break the speed limit . Generally , the priority of the response to the call will be assigned by the dispatcher , but the priority of the return will be decided by the ambulance crew based on the severity of the patient 's illness or injury . Patients in significant danger to life and limb (as determined by triage) require urgent treatment by advanced medical personnel , and because of this need , emergency ambulances are often fitted with passive and active visual and / or audible warnings to alert road users .

= = = Passive visual warnings = = =

The passive visual warnings are usually part of the design of the vehicle , and involve the use of high contrast patterns . Older ambulances (and those in developing countries) are more likely to

have their pattern painted on , whereas modern ambulances generally carry retro @-@ reflective designs , which reflects light from car headlights or torches . Popular patterns include ' checker board ' (alternate coloured squares , sometimes called ' Battenburg ' , named after a type of cake) , chevrons (arrowheads ? often pointed towards the front of the vehicle if on the side , or pointing vertically upwards on the rear) or stripes along the side (these were the first type of retro @-@ reflective device introduced , as the original reflective material , invented by 3M , only came in tape form) . In addition to retro @-@ reflective markings , some services now have the vehicles painted in a bright (sometimes fluorescent) yellow or orange for maximum visual impact . Fire Department @-@ operated Ambulances are often painted similarly to their apparatuses for ease of identification and the fact that bright red is a very striking color appropriate for this type of vehicle .

Another passive marking form is the word ambulance (or local language variant) spelled out in reverse on the front of the vehicle . This enables drivers of other vehicles to more easily identify an approaching ambulance in their rear view mirrors . Ambulances may display the name of their owner or operator , and an emergency telephone number for the ambulance service .

Ambulances may also carry an emblem (either as part of the passive warning markings or not) , such as a Red Cross , Red Crescent or Red Crystal (collective known as the Protective Symbols) . These are symbols laid down by the Geneva Convention , and all countries signatory to it agree to restrict their use to either (1) Military Ambulances or (2) the national Red Cross or Red Crescent society . Use by any other person , organization or agency is in breach of international law . The protective symbols are designed to indicate to all people (especially combatants in the case of war) that the vehicle is neutral and is not to be fired upon , hence giving protection to the medics and their casualties , although this has not always been adhered to . In Israel , Magen David Adom , the Red Cross member organization use a red Star of David , but this does not have recognition beyond Israeli borders , where they must use the Red Crystal .

The Star of Life is widely used , and was originally designed and governed by the U.S. National Highway Traffic Safety Administration , because the Red Cross symbol is legally protected by both National and international law . It indicates that the vehicle 's operators can render their given level of care represented on the six pointed star .

Ambulance services that have historical origins such as the Order of St John , the Order of Malta Ambulance Corps and Malteser International often use the Maltese cross to identify their ambulances . This is especially important in countries such as Australia , where St. John Ambulance operate one state and one territory ambulance service , and all of Australia 's other ambulance services use variations on a red Maltese cross .

Fire service operated ambulances may display the Cross of St. Florian (often incorrectly called a Maltese cross) as this cross is frequently used as a fire department logo (St. Florian being the patron saint of firefighters) .

= = = Active visual warnings = = =

The active visual warnings are usually in the form of flashing lights . These flash in order to attract the attention of other road users as the ambulance approaches , or to provide warning to motorists approaching a stopped ambulance in a dangerous position on the road . Common colours for ambulance warning beacons are blue , red , amber , and white (clear) . However the colours may vary by country and sometimes by operator .

There are several technologies in use to achieve the flashing effect . These include flashing a light bulb or LED , flashing or rotating halogen , and strobe lights , which are usually brighter than incandescent lights . Each of these can be programmed to flash singly or in groups , and can be programmed to flash in patterns (such as a left - > right pattern for use when the ambulance is parked on the left hand side of the road , indicating to other road users that they should move to the right (away from the ambulance)) . Incandescent and LED lights may also be programmed to burn steadily , without flashing , which is required in some provinces .

Emergency lights may be housed in special fittings , such as in a lightbar , or may be hidden in a host light (such as a headlamp) by drilling a hole in the host light 's reflector and inserting the

emergency light . These hidden lights may not be apparent until they are activated . Additionally , some of the standard lights fitted to an ambulance (e.g. headlamps , tail lamps) may be programmed to flash . Flashing headlights (typically the high beams , flashed alternately) are known as a wig @-@ wag .

In order to increase safety , it is best practice to have 360 ° coverage with the active warnings , improving the chance of the vehicle being seen from all sides . In some countries , such as the United States , this may be mandatory .

See also Emergency vehicle equipment .

= = = Audible warnings = = =

In addition to visual warnings , ambulances can be fitted with audible warnings , sometimes known as sirens , which can alert people and vehicles to the presence of an ambulance before they can be seen . The first audible warnings were mechanical bells , mounted to either the front or roof of the ambulance . Most modern ambulances are now fitted with electronic sirens , producing a range of different noises which ambulance operators can use to attract more attention to themselves , particularly when proceeding through an intersection or in heavy traffic .

The speakers for modern sirens can be integral to the lightbar , or they may be hidden in or flush to the grill to reduce noise inside the ambulance that may interfere with patient care and radio communications . Ambulances can additionally be fitted with airhorn audible warnings to augment the effectiveness of the siren system .

A recent development is the use of the RDS system of car radios . The ambulance is fitted with a short range FM transmitter , set to RDS code 31 , which interrupts the radio of all cars within range , in the manner of a traffic broadcast , but in such a way that the user of the receiving radio is unable to opt out of the message (as with traffic broadcasts) . This feature is built into every RDS radio for use in national emergency broadcast systems , but short range units on emergency vehicles can prove an effective means of alerting traffic to their presence . It is , however , unlikely that this system could replace audible warnings , as it is unable to alert pedestrians , those not using a compatible radio or even have it turned off .

= = Service providers = =

Some countries closely regulate the industry (and may require anyone working on an ambulance to be qualified to a set level) , whereas others allow quite wide differences between types of operator .

Government Ambulance Service ? Operating separately from (although alongside) the fire and police service of the area , these ambulances are funded by local or national government . In some countries , these only tend to be found in big cities , whereas in countries such as Great Britain almost all emergency ambulances are part of a nationwide system under the National Health Service . In Canada ambulance services are normally operated by local municipalities or provincial health agencies as a separate entity from fire or police services .

Fire or Police Linked Service ? In countries such as the United States , Japan , Hong Kong and France ambulances can be operated by the local fire or police service , more commonly the fire service due to overlapping calls . This is particularly common in rural areas , where maintaining a separate service is not necessarily cost effective , or by service preference such as in LA where the LAFD prefers to handle all parts of emergency medicine in @-@ house . In some cases this can lead to an illness or injury being attended by a vehicle other than an ambulance , such as a fire truck .

Volunteer Ambulance Service ? Charities or non @-@ profit companies operate ambulances , both in an emergency and patient transport function . This may be along similar lines to volunteer fire companies , providing the main service for an area , and either community or privately owned . They may be linked to a voluntary fire department , with volunteers providing both services . There are charities who focus on providing ambulances for the community , or for cover at private events (

sports etc .) . The Red Cross provides this service across the world on a volunteer basis . (and in others as a Private Ambulance Service) , as do other organisations such as St John Ambulance and the Order of Malta Ambulance Corps . These volunteer ambulances may be seen providing support to the full @-@ time ambulance crews during times of emergency . In some cases the volunteer charity may employ paid members of staff alongside volunteers to operate a full @-@ time ambulance service , such in some parts of Australia and in Ireland and New Zealand .

Private Ambulance Service ? Normal commercial companies with paid employees , but often on contract to the local or national government . Private companies may provide only the patient transport elements of ambulance care (i.e. nonurgent or ambulatory transport) , but in some places , they are contracted to provide emergency care , or to form a ' second tier ' response . In many areas private services cover all emergency transport functions and government agencies do not provide this service . Companies such as Falck , Acadian Ambulance , and American Medical Response are some of the larger companies that provide such services . These organisations may also provide services known as ' Stand @-@ by ' cover at industrial sites or at special events . From April 2011 all private ambulance services in the UK must be Care Quality Commission (CQC) registered . Private services in Canada operate non @-@ emergency patient transfers or for private functions only .

Combined Emergency Service ? these are full service emergency service agencies , which may be found in places such as airports or large colleges and universities . Their key feature is that all personnel are trained not only in ambulance (EMT) care , but as a firefighter and a peace officer (police function) . They may be found in smaller towns and cities , where size or budget does not warrant separate services . This multi @-@ functionality allows to make the most of limited resource or budget , but having a single team respond to any emergency .

Hospital Based Service ? Hospitals may provide their own ambulance service as a service to the community , or where ambulance care is unreliable or chargeable . Their use would be dependent on using the services of the providing hospital .

Charity Ambulance ? This special type of ambulance is provided by a charity for the purpose of taking sick children or adults on trips or vacations away from hospitals , hospices or care homes where they are in long term care . Examples include the UK 's ' Jumbulance ' project .

Company Ambulance ? Many large factories and other industrial centres , such as chemical plants , oil refineries , breweries and distilleries , have ambulance services provided by employers as a means of protecting their interests and the welfare of their staff . These are often used as first response vehicles in the event of a fire or explosion .

= = Costs = =

The cost of an ambulance ride may be paid for from several sources , and this will depend on the type of service being provided , by whom , and possibly who to .

Government funded service ? The full or the majority of the cost of transport by ambulance is borne by the local , regional , or national government (through their normal taxation) .

Privately funded service ? Transport by ambulance is paid for by the patient themselves , or through their insurance company . This may be at the point of care (i.e. payment or guarantee must be made before treatment or transport) , although this may be an issue with critically injured patients , unable to provide such details , or via a system of billing later on .

Charity funded service ? Transport by ambulance may be provided free of charge to patients by a charity , although donations may be sought for services received .

Hospital funded service ? Hospitals may provide the ambulance transport free of charge , on the condition that patients use the hospital 's services (which they may have to pay for) .

= = Crewing = =

There are differing levels of qualification that the ambulance crew may hold , from holding no formal qualification to having a fully qualified doctor on board . Most ambulance services require at least

two crew members to be on every ambulance (one to drive , and one to attend the patient) , although response cars may have a sole crew member , possibly backed up by another double @-@ crewed ambulance . It may be the case that only the attendant need be qualified , and the driver might have no medical training . In some locations , an advanced life support ambulance may be crewed by one paramedic and one EMT @-@ Basic .

Common ambulance crew qualifications are :

First responder ? A person who arrives first at the scene of an incident , and whose job is to provide early critical care such as cardiopulmonary resuscitation (CPR) or using an automated external defibrillator (AED) . First responders may be dispatched by the ambulance service , may be passers @-@ by , or may be dispatched to the scene from other agencies , such as the police or fire departments .

Ambulance Driver ? Some services employ staff with no medical qualification (or just a first aid certificate) whose job is to simply drive the patients from place to place . In some emergency ambulance contexts this term is a pejorative toward qualified providers implying that they perform no function but driving , although it may be acceptable for patient transport or community operations . In some areas , these drivers would survey and study the local network of routes for better performance of service , as some road routes may be blocked , and the driver must know another route to the patient or to the hospital . The driver would gather the local weather and traffic status reports before and in @-@ between emergencies . They may also have training in using the radio and knowing where medical supplies are stored in the ambulance .

Ambulance Care Assistant ? Have varying levels of training across the world , but these staff are usually only required to perform patient transport duties (which can include stretcher or wheelchair cases) , rather than acute care . Dependent on provider , they may be trained in first aid or extended skills such as use of an AED , oxygen therapy and other lifesaving or palliative skills . They may provide emergency cover when other units are not available , or when accompanied by a fully qualified technician or paramedic .

Emergency Care Assistant / Emergency Care Support Workers ? Also known as ECA / ECSW are members of a frontline ambulance that drive the vehicles under both emergency and non @-@ emergency conditions to incidents . Their role is to assist the clinician that they are working with either a Technician or Paramedic in there duties whether that be drawing up drugs , setting up fluids (but not attaching) , doing basic observations or performing 12 lead ECG assessments .

Emergency medical technician ? Also known as Ambulance Technician . Technicians are usually able to perform a wide range of emergency care skills , such as defibrillation , spinal immobilization , bleeding control , splinting of suspected fractures , assisting the patient with certain medications , and oxygen therapy . Some countries split this term into levels (such as in the US , where there is EMT @-@ Basic and EMT @-@ Intermediate) .

Registered nurse (RN) ? Nurses can be involved in ambulance work dependent on the jurisdiction , and as with doctors , this is mostly as air @-@ medical rescuers often in conjunction with a technician or paramedic . They may bring different skills to the care of the patient , especially those who may be critically ill or injured in locations that do not enjoy close proximity to a high level of definitive care such as trauma , cardiac , or stroke centers .

Paramedic ? This is a high level of medical training and usually involves key skills not permissible for technicians , such as cannulation (and with it the ability to administer a range of drugs such as morphine) , tracheal intubation and other skills such as performing a cricothyrotomy . Dependent on jurisdiction , the title " paramedic " can be a protected title , and use of it without the relevant qualification may result in criminal prosecution .

Emergency Care Practitioner ? This position , sometimes called ' Super Paramedic ' in the media , is designed to bridge the link between ambulance care and the care of a general practitioner . ECPs are already qualified paramedics who have undergone further training , and are trained to prescribe medicines for longer term care , such as antibiotics , as well as being trained in a range of additional diagnostic techniques .

Doctor ? Doctors are present on some ambulances ? most notably air ambulances ? will employ physicians to attend on the ambulances , bringing a full range of additional skills such as use of

prescription medicines .

= = Military use = =

Military ambulances have historically included vehicles based on civilian designs and at times also included armored , but unarmed , vehicles ambulances based upon armoured personnel carriers (APCs) . In the Second World War vehicles such as the Hanomag Sd Kfz 251 halftrack were pressed into service as ad hoc ambulances , and in more recent times purpose built AFVs such as the U.S. M1133 Medical Evacuation Vehicle serve the exclusive purpose of armored medical vehicles . Civilian based designs may be painted in appropriate colours , depending on the operational requirements (i.e. camouflage for field use , white for United Nations peacekeeping , etc .) . For example , the British Royal Army Medical Corps has a fleet of white ambulances , based on production trucks . Military helicopters have also served both as ad hoc and purpose @-@ built air ambulances , since they are extremely useful for MEDEVAC .

Since laws of war demand ambulances be marked with one of the Emblems of the Red Cross not to mount offensive weapons , military ambulances are often unarmed . It is a generally accepted practice in most countries to classify the personnel attached to military vehicles marked as ambulances as non @-@ combatants ; however , this application does not always exempt medical personnel from catching enemy fire ? accidental or deliberate . As a result , medics and other medical personnel attached to military ambulances are usually put through basic military training , on the assumption that they may have to use a weapon . The laws of war do allow non @-@ combatant military personnel to carry individual weapons for protecting themselves and casualties . However , not all militaries exercise this right to their personnel .

Recently , Israel has modified a number of its Merkava main battle tanks with ambulance features in order to allow rescue operations to take place under heavy fire in urban warfare . The modifications were made following a failed rescue attempt in which Palestinian gunmen killed two soldiers who were providing aid for a Palestinian woman in Rafah . Since M @-@ 113 armored personnel carriers and regular up @-@ armored ambulances are not sufficiently protected against anti @-@ tank weapons and improvised explosive devices , it was decided to use the heavily armored Merkava tank . Its rear door enables the evacuation of critically wounded soldiers . Israel did not remove the Merkava 's weaponry , claiming that weapons were more effective protection than emblems since Palestinian militants would disregard any symbols of protection and fire at ambulances anyway . For use as ground ambulances and treatment & evacuation vehicles , the United States military currently employs the M113 , the M577 , the M1133 Stryker Medical Evacuation Vehicle (MEV) , and the RG @-@ 33 Heavily Armored Ground Ambulance (HAGA) as treatment and evacuation vehicles , with contracts to incorporate the newly designed M2A0 Armored Medical Evacuation Vehicle (AMEV) , a variant of the M2 Bradley Fighting Vehicle (formerly known as the ATTV) .

Some navies operate ocean @-@ going hospital ships to lend medical assistance in high casualty situations like wars or natural disasters . These hospital ships fulfill the criteria of an ambulance (transporting the sick or injured) , although the capabilities of a hospital ship are more on par with a Mobile Army Surgical Hospital . In line with the laws of war , these ships can display a prominent Red Cross or Red Crescent to confer protection under the appropriate Geneva convention . However , this designation has not always protected hospital ships from enemy fire .

= = Reuse of retired ambulances = =

When an ambulance is retired , it may be donated or sold to another EMS provider . Alternately , it may be adapted into a storage and transport vehicle for crime scene identification equipment , a command post at community events , or support vehicle , such as a logistics unit . Others are refurbished and resold , or may just have their emergency equipment removed to be sold to private businesses or individuals , who then can use them as small recreational vehicles .

Toronto 's City Council has begun a " Caravan of Hope " project to provide retired Toronto ambulances a second life by donating them to the people of El Salvador . Since the Province of

Ontario requires that ambulances be retired after just four and a half years in service in Ontario , the City of Toronto decommissions and auctions 28 ambulances each year .