

Chapter 2

救助・救急

Rescue operations, First-aid

救える命を、救いたい

各種の災害に即応し、「救える命を確実に

Saving anyone and anything that can be saved

Reviewing, improving and enhancing systems, and organizing equipment to

全国各地から駆けつけてくる精鋭部隊

Elite teams coming to your assistance from across the country

各消防機関には消火・救助・救急活動を実施する部隊が置かれており、地域住民の安心・安全を守っています。しかしながら、大規模災害や特殊災害が発生したとき、被災地の消防機関だけでは対処できないことも想定されます。そのようなとき、被災地の要請を受け、空から、陸から応援部隊が駆けつけます。

この応援部隊こそが『緊急消防援助隊』であり、地域を越え、消防庁を中心に全国的観点から消火・救助・救急活動を実施します。

緊急消防援助隊は、様々な災害に対応できるよう多岐にわたる精鋭部隊から構成され、これまで数々の大規模災害等において出動し成果を上げています。

Personnel have been put in place within every firefighting organization for fighting fires, providing rescue and emergency activities, and protecting the safety and security of local residents. Yet in the event of a major disaster or special type of disaster, firefighting organizations in the disaster area may not be able to cope with the disaster alone. Response teams can provide assistance from the air and ground as soon as requested by organizations in the disaster stricken area.

These response teams are known as “Emergency Fire Response Teams” and provide assistance for fighting fires, rescues and emergency activities across the nation, regardless of location, under the command of the FDMA.

Emergency Fire Response Teams are comprised of various elite teams that are capable of tackling any type of disaster, and until now have been involved in successfully providing assistance in a number of major disasters and accidents.



緊急消防援助隊地域ブロック合同訓練
Joint training between regional Emergency Fire Response Teams



被災地へ向かう緊急消防援助隊（能登半島地震）
Emergency Fire Response Teams heading to disaster-stricken areas (Noto peninsula earthquake)

平成16年4月1日より、消防庁長官が、大規模災害・事故の際に、部隊の出動・運用を指示できるようになりました。

From April 1, 2004, the Commissioner of the Fire and Disaster Management Agency has the authority to mobilize and control firefighting teams in the event of a large-scale disaster or accident.

総務省消防庁 Fire and Disaster Management Agency

災害情報のリアルタイム把握、緊急消防援助隊への出動指示等、オペレーションを担うのが消防庁です。

The FDMA controls all aspects of management, from obtaining real-time information on the disaster to instructing Emergency Fire Response Teams to mobilize.

大規模災害・特殊災害が発生した場合
In the event of a large-scale disaster or accident

消防庁の対応 Response from the Fire and Disaster Management Agency

- 情報を収集・分析し、被害状況に応じた迅速的確な出動指示を行います
- 消防庁長官による出動指示

Gather and analyze information, and instruct prompt and appropriate mobilization of response teams to suit disaster conditions.

Mobilization instructions from the Commissioner of the Fire and Disaster Management Agency

指示により、各地の緊急消防援助隊が出動。被災地に向かいます。

Emergency Fire Response Teams throughout the country are mobilized to disaster-stricken areas under the instruction of the Commissioner of the Fire and Disaster Management Agency.

（東海地震等大規模災害、特殊な災害の場合）

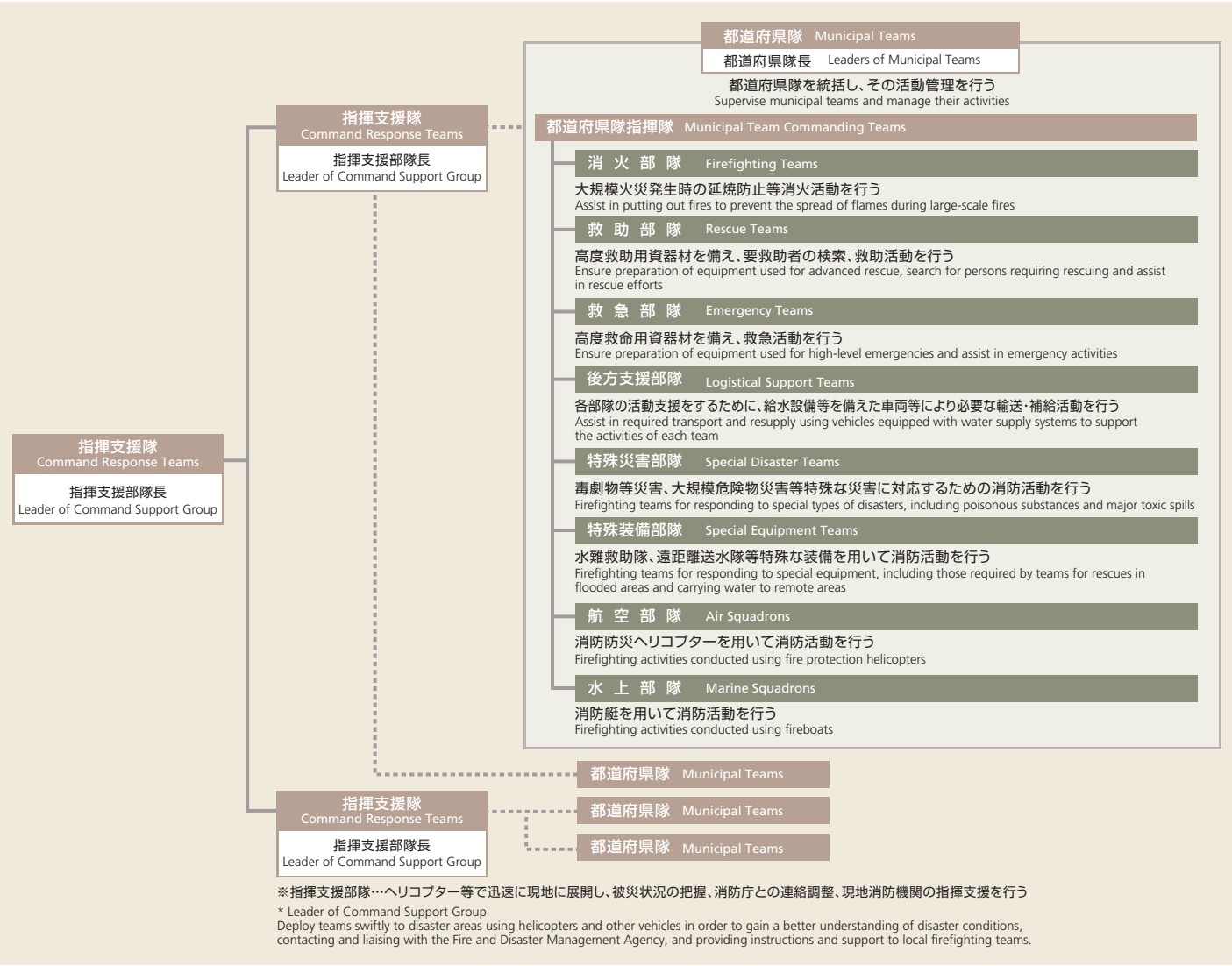
(In the event of a large-scale disaster, such as the Tokai Earthquake, or special disasters)



「救う」ための制度を検討・充実強化、資器材の配備

respond swiftly to any type of disaster for “saving people’s lives in any way possible”

緊急消防援助隊の部隊編成 Emergency Fire Response Teams Organization



主な出動事例 Examples of major mobilization

出動年月日 Mobilization Date	災害名 等 Name of Disaster	出動年月日 Mobilization Date	災害名 等 Name of Disaster
●平成 7 年 6 月緊急消防援助隊創設 June 1995 Emergency Fire Response Teams founded		●平成 16 年 4 月 1 日法制化以降 April 1, 2004 After legislation	
H08.12.06 December 6, 1996	蒲原沢土石流災害 Disastrous avalanche of earth and rocks in Kiyoharasawa	H16.07.13 July 13, 2004	新潟・福島豪雨 Niigata and Fukushima Prefecture torrential rains
H12.03.31 March 31, 2000	有珠山噴火災害 Mt. Usu volcanic eruption	H16.07.18 July 18, 2004	福井豪雨 Fukui Prefecture torrential rains
H12.10.06 October 6, 2000	鳥取県西部地震（震度 6 強） West Tottori earthquake (seismic intensity: 6 plus)	H16.10.21 October 21, 2004	兵庫県豊岡市水害 Hyogo Prefecture Tomioka City floodin
H15.07.26 July 26, 2003	宮城県北部を震源とする地震（震度 6 強・6 弱） North Miyagi earthquake (seismic intensity: 6 plus, 6 minus)	H16.10.23 October 23, 2004	新潟県中越地震（震度 7） Niigata Prefecture chuetsu earthquake (seismic intensity: 7)
H15.08.14 August 14, 2003	三重県ごみ固形燃料発電所火災 Mie Prefecture RDF power plant fire	H17.03.20 March 20, 2005	福岡県西方沖を震源とする地震（震度 6 弱） Earthquake with its epicenter offshore from Fukuoka Prefecture seiho (seismic intensity: 6 minus)
H15.09.08 September 8, 2003	栃木県黒磯市ブリヂストン栃木工場火災 Bridgestone plant fire in Kuroiso City, Tochigi	H17.04.25 April 25, 2005	JR 西日本福岡山線列車事故 West JR Fukuochiyama Line train accident
H15.09.26 September 26, 2003	十勝沖地震（震度 6 弱） Tokachi offshore earthquake (seismic intensity: 6 minus)	H19.03.25 March 25, 2007	能登半島地震（震度 6 強） Noto peninsula earthquake (seismic intensity: 6 plus)
H15.09.28 September 28, 2003	出光興産北海道製油所原油貯蔵タンク火災 Idemitsukosan Hokkaido refinery tank fire	H19.07.16 July 16, 2007	新潟県中越沖地震（震度 6 強） Niigata Prefecture chuetsu earthquake (seismic intensity: 6 plus)
		H20.06.14 June 14, 2008	岩手・宮城内陸地震（震度 6） Iwate, Miyagi nairiku earthquake (seismic intensity: 6 plus)
		H20.07.24 July 24, 2008	岩手県沿岸北部を震源とする地震（震度 6 弱） Earthquake with its epicenter at Iwate Prefecture enganhokubu (seismic intensity: 6 minus)

地域の安全を守る救助隊、「レスキュー隊」

Rescue teams, protecting regional safety

消防機関の行う救助活動は、火災、交通事故、水難事故、自然災害から、テロ災害などの特殊な災害にまで及んでいます。こうした救助活動の中心を担うのは、人命救助の専門教育と訓練を受けたエキスパートの隊員と、各種の救助資機材やこれらを搭載した救助工作車で構成される『救助隊』です。

消防庁では、年々高度化・多様化する救助事案に適切に対応するために、より高度な救助技術の検討や普及などを進めつつ、緊急消防援助隊設備整備費補助金等により、救助資機材等の整備促進を図っています。

Rescue activities that firefighting organizations are involved with range from fires, traffic accidents, flooding and natural disasters, extending to special types of disasters that includes terrorist attacks. At the heart of these rescue efforts are Rescue Teams, comprising of experts that have received special education and training on life-saving and rescue techniques, various types of rescue equipment, and rescue vehicles for carrying bees.

To respond to increasingly difficult and varying rescue efforts in the best way possible, the FDMA is always testing and implementing more advanced rescue technologies, and ensuring the maintenance of rescue equipment through subsidies aimed at raising funds for maintenance and equipment used by Emergency Fire Response Teams.



交通救助活動
Traffic accident rescue efforts



水難救助活動
Water flooding rescue efforts

山岳救助活動
Mountaineering accident rescue efforts



消防防災ヘリコプターによる、航空消防防災体制の充実

Comprehensive airborne fire protection system using fire protection helicopters

消防防災ヘリコプターは、山岳や海上での救助活動のほか、林野火災の空中消火、重症患者の救急搬送など、その任務は多岐に渡り、出動件数は年々増加しています。また大規模地震により建物倒壊、道路陥没、港湾施設が損壊し、交通機能がストップした場合、高機動なヘリコプターの活用が極めて有効です。

特に被災地の映像等の情報を収集し、消防庁や総理官邸等へ伝送する任務は、その後の対策を決めるうえで重要な役割を果たしています。

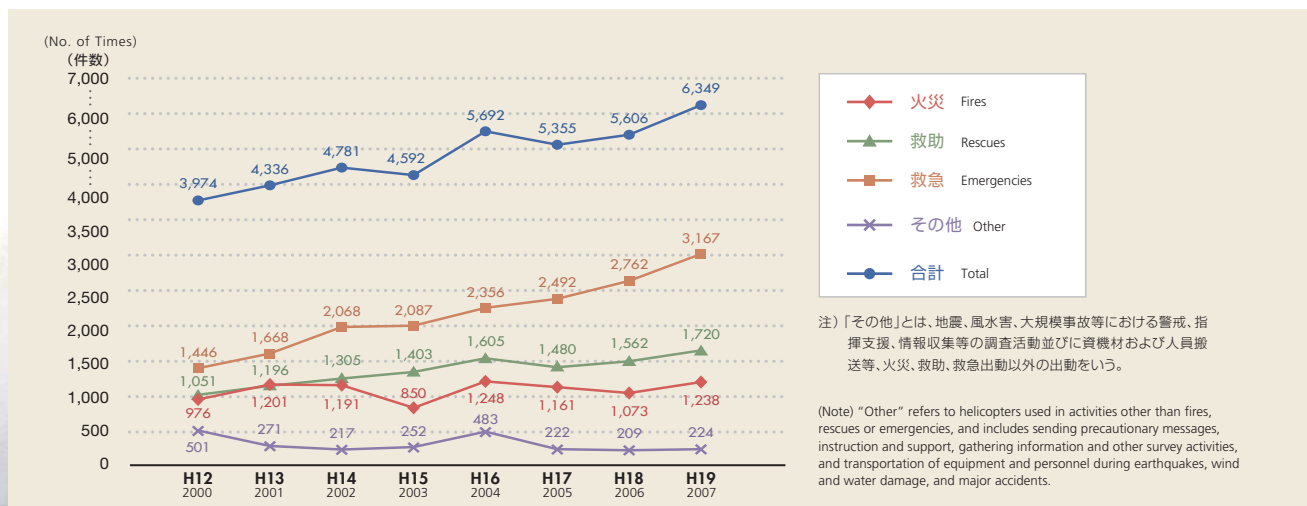
消防庁では、このような情報収集活動を円滑に行うため、ヘリコプターテレビ電送システム、可搬型ヘリコプターテレビ受信装置等の資機材を整備するなど、航空消防防災体制の一層の充実強化を進めています。

In addition to rescue efforts in mountainous regions and at sea, fire protection helicopters are active in a large number of fields, including fighting forest fires from the air and the emergency transport of critically injured patients, and their use is increasing on a yearly basis. With high maneuverability, helicopters are extremely effective if buildings have collapsed, roads have caved in, port facilities have been destroyed, and all other transportation methods have ceased functioning after a large-scale earthquake.

Helicopters play an important role in gathering information from disaster stricken areas, by sending video feeds to the FDMA and other agencies such as the office of the Prime Minister, as part of efforts to determine what strategies are to be taken.

To ensure that information is gathered in the smoothest way possible, the FDMA has installed equipment such as helicopter TV transmission systems and transportable helicopter TV reception devices as part of improving and enhancing the airborne fire protection system.

消防防災ヘリコプターによる災害活動状況 Fire protection helicopters used in disasters



救急救命体制の充実

Enhancing life-saving systems

高齢化が急速に進み、年々増加し続ける救急出動に対応する救急隊員。救急現場から病院に到着するまでの一分一秒は、「救える命」を確実に救うための、かけがえのない時間です。この間における対応が、重度傷病者の明暗を分ける、といっても過言ではありません。通報から応急処置・搬送そして医療機関へという「救命の連鎖」において、有効かつ円滑に作用する救急業務実施体制の充実強化を図っていく必要があります。

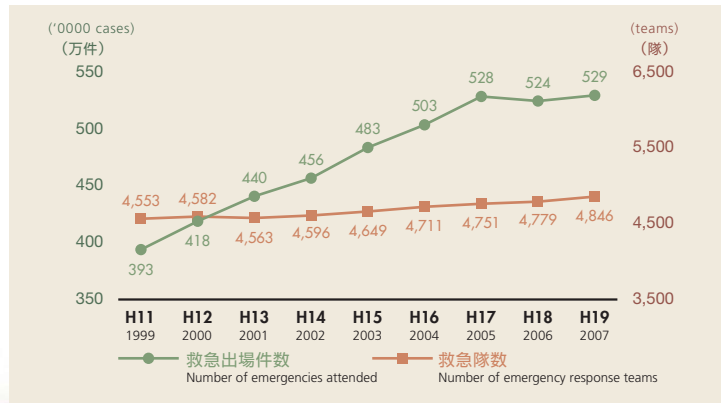
With the sudden increase in the number of elderly people, emergency response teams are the ones who attend the ever increasing number of emergency callouts every year. Every second taken to arrive at hospitals from scenes of emergencies is invaluable for properly saving the lives of people. Any form of response during this time can mean the difference between life and death for some seriously injured patients. Emergency response systems must be enhanced and improved to ensure effective and smooth operation during the "Chain of Survival", referring to the time from when an emergency call is placed, emergency treatment is provided, and the patient is transported to a medical facility.

消防庁では、消防機関と医療機関の連携強化を推進するとともに、救急業務の高度化に伴う、高規格の救急自動車、高度救命処置用資器材等の整備を積極的に進めています。

The FDMA is improving links between fire prevention organizations and medical facilities, as well as actively introducing high standard emergency vehicles and equipment used for advanced emergency procedures, following more sophisticated emergency response systems.

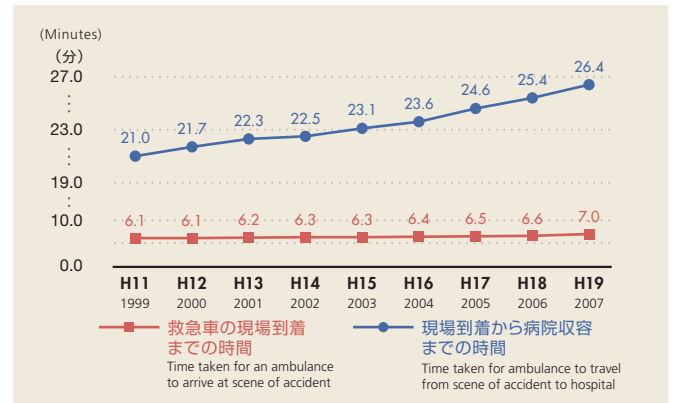
救急出場件数と救急隊数の推移

Trends in the number of emergencies attended and number of emergency response teams

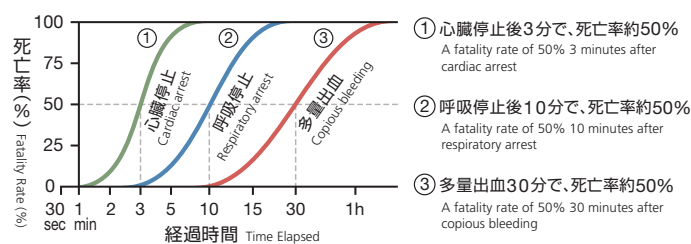


救急隊の活動時間の推移

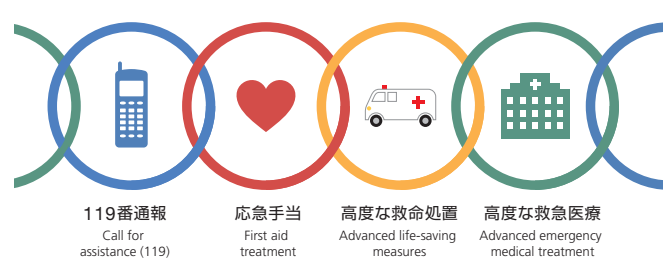
Trends in the activity time of emergency response teams



カーラーの救命曲線 Golden Hour Principle



救命の連鎖 (チェーン・オブ・サバイバル) Chain of Survival



救急救命士制度の充実と効果

Improvements to the emergency medical technician system and effects

救急救命士は、救急隊員のうち、心肺停止傷病者に対して救命処置等の医療行為が行える国家資格を有する職員のことです。平成3年の制度導入以降、着実に養成され、各地の救急現場において活躍しています。

消防庁においては、全国すべての救急隊に少なくとも救急救命士が1人配置できるよう、救急救命士の養成を積極的に推進しています。

Emergency medical technicians are nationally certified members of emergency response teams able to provide medical treatment and other life-saving techniques to patients

who are suffering cardiac arrest. Training of emergency medical technicians has progressed steadily since the introduction of the system in 1991, and these personnel are active throughout the various emergency situations.

The FDMA has continued to train emergency medical technicians with the aim of providing each and every emergency response team throughout the country with at least one emergency medical technician.



救急救命士による気管挿管
Tracheal intubation being conducted by emergency medical technicians

誰でも使える救急アイテム、自動体外式除細動器（AED）

Automated external defibrillator, an emergency item that can be used by anybody

心臓の筋肉がけいれんし、血液を送り出すポンプ機能が失われる心室細動に陥った際の唯一の治療法が、電気的除細動（電気ショック）です。この電気ショックを一般市民の方でも簡単に扱えるようにした救命アイテム、それがAED（自動体外式除細動器）です。

AEDは病院や診療所はもちろん、空港や駅、学校、スポーツクラブ、公共施設、企業など、人が多く集まる場所を中心に設置されています。スイッチを入れて音声ガイドに従って使用します。AEDが心臓の動きを自動解析し、必要な人にだけ電気ショックを与える仕組みになっているため、安心して使用でき、最近では、一般市民（バイスタンダー）がAEDを使用し救命した事例が多く報告されています。

The only way of treating ventricular fibrillation, where spasms in the muscles of the heart stop blood from being pumped around the body, is electrical defibrillation (electric shock). An AED (automated external defibrillator) is a life-saving item that applies an electrical shock, and can be used easily by members of the general public.

In addition to hospitals and health clinics, AEDs are installed in areas where a large number of people congregate, such as airports and stations, schools, sports clubs, public facilities and companies. The device can be used by powering it on and following the voice guidance. The AED automatically analyzes the movement of the heart, and is designed so that it only applies an electrical shock to those who need it. The device is safe to use, and there have been many reports recently of members of the general public (bystanders) using AEDs to save people's lives.



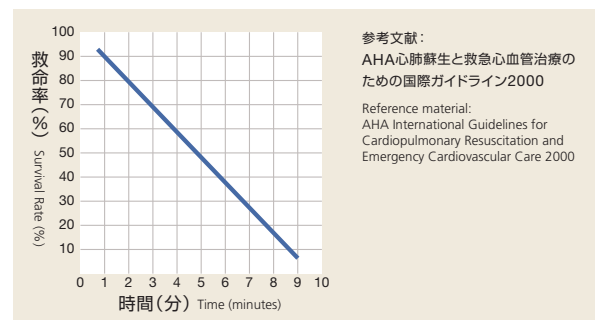
救命講習
Lifesaving training



自動体外式除細動器（AED）
Automated external defibrillator (AED)

心室細動の発症から除細動までの経過時間と除細動の成功率

Time elapsed from the onset of ventricular fibrillation to defibrillation, and defibrillation success rate



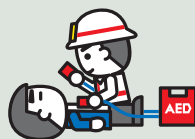
TOPICS 2



救急需要対策の推進

Implementing emergency demand measures

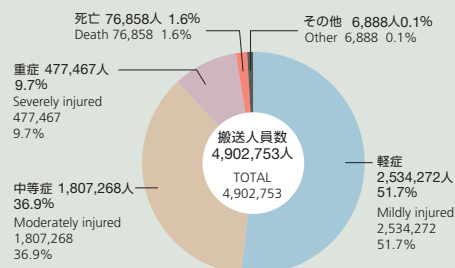
消防庁では、救急車の適正利用を一般市民に呼びかけるとともに、軽症者等の搬送業務の民間活用、転院搬送業務の病院救急自動車の利用を促進するほか、地域の救急需要に応じたトリアージ（緊急度・重症度の選別）の導入を検討しており、真に急を要する傷病者のために、救急車の適正利用について、国民に理解を求めています。



The FDMA makes appeals to the general public regarding the appropriate use of emergency vehicles, as well as using companies in the private sector for the transportation of mildly injured patients and promoting the use of hospital emergency vehicles for transporting patients between hospitals. The agency is also looking at introducing a triage system (for categorizing the degree of emergency and degree of injury) to suit emergency demand of any particular region, and is making sure that the general public understands the appropriate use of emergency vehicles for patients who really require them.

救急自動車による傷病程度別搬送人員

Persons transported by emergency vehicles by degree of injury



救急車の出場件数が増え続け、都市によってはバンク寸前にまで追い込まれています。高齢化や核家族化に加え、住民意識の変化等による、必ずしも緊急性のない出動要請も少なくありません。救急隊の現場到着に要する時間も遅延傾向にあり、一刻を争う局面においては深刻な問題となっています。

The number of emergency vehicles attending callouts have increased so much that emergency services are being stretched thin in some cities. In addition to the shift to an elderly population and a greater number of nuclear families, changes in public consciousness have led to a considerable number of emergency vehicles attending callouts that did not actually require any urgency. Emergency response teams are also taking longer to arrive at the scene of an emergency, causing a serious problem in situations where every second is vital.

緊急時に救急車の要請をすべきか、どのような措置をとるべきかなどの市民の相談に、消防と医療が連携して応じる救急相談事業の全国的な展開に取り組んでいます。

Fire services and medical institutions are working together to implement an emergency consultation service throughout the country, making it easier for the public to determine whether emergency vehicles are actually required during emergencies, and to provide advice on what measures should be taken.



救急車の適正利用啓発ポスター
Poster urging the appropriate use of ambulances