Ambulance Services

Materials created by the Fire and Disaster Management Agency were translated by the International Fire Service Information Center

Positioning of Ambulance Services and the Implementation System

○ Positioning of ambulance services

- Ambulance Services were legislated in 1963. In 1986, transfer services for the injured and those ill with diseases were added to the existing transfer services of those injured and ill due to disasters as the scope of the ambulance service, and emergency treatment by an ambulance team member was specified by law.
- In 1991, the Emergency Life-Saving Technicians Act was enacted, and the emergency life-saving technician system was established, in which emergency life-saving technicians can perform advanced emergency life-saving treatment (including tracheal intubation and administration of medicine.)
- In 2009, the proper transfer of injured and ill persons was included in the purposes and tasks of the fire service in addition to those already existing such as minimizing damage due to disasters.

○ Implementation system of ambulance services (as of April 1st, 2014)

- Number of fire-fighting head offices: 752 (456 in independent head office, and 427 in cooperative head offices)
- Number of municipalities that operate an ambulance service: 1,686
- Number of ambulance teams: 5,028
- Number of ambulance team members: 60,634
- Number of qualified emergency life-saving technicians: 31,012
- Number of qualified emergency life-saving technicians in operation: 23,560

Definitions of an Ambulance Team and Ambulance Services

○ Ambulance team and ambulance team members

- Ambulance team: ・ To be composed of a vehicle and at least three ambulance team members
  (May be composed of two ambulance team members and either one of a doctor, nurse, assistant nurse, or emergency life - saving technician when transporting patients between hospitals)
  ・ To be composed of one aircraft and two or more ambulance team members
  (Article 44 of the Fire Services Act Enforcement Ordinance)
- Ambulance team member: ・ Fire fighting personnel who has completed a course of training on ambulance services (135 hours or more) specified by ministerial ordinance
  ・ Fire fighting personnel who have an emergency life-saving technician license
  ・ Fire fighting personnel who are specified by the commissioner of Fire and Disaster Management Agency as a person with knowledge and experience concerning ambulances services equal or superior to that of a person listed above.
  (Article 50 to 51-2 of the Fire Services Act enforcement regulations)

○ Definitions of ambulance services, emergency treatment and others

- Services for transporting a person who has suffered an injury or contracted a disease as a result of a disaster or other accident and needs to be transported urgently to a medical institution or any other place (including the service of providing an injured or ill person with first-aid treatment, as an urgent and unavoidable measure, until such person is placed under the control of a doctor) (Article 2-9 of the Fire Services Act)

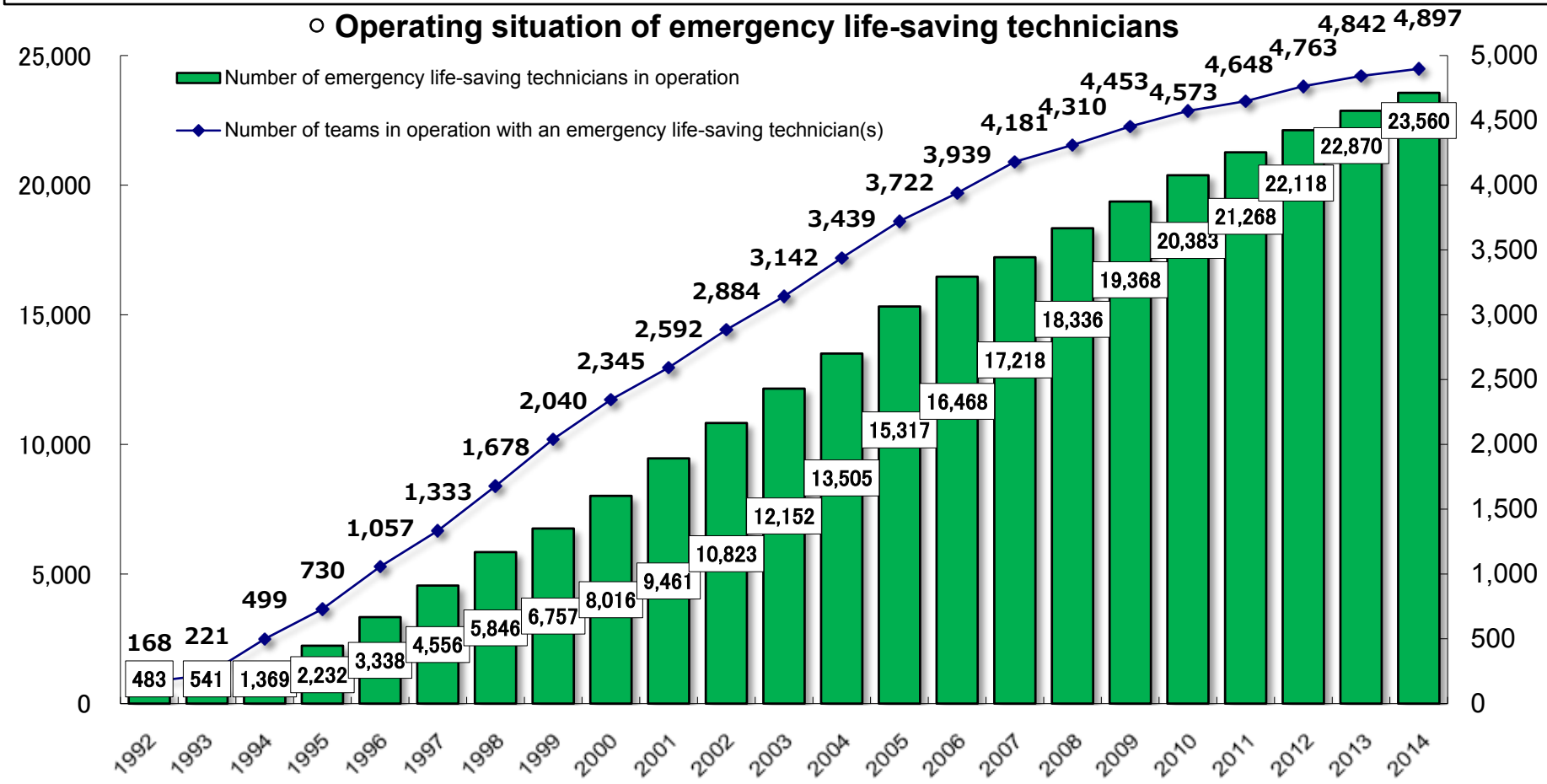
* Article 17 of the Medical Practitioners' Act stipulates that no person except a medical practitioner shall engage in medical practice.

- Range of first-aid treatment: within the range of standards concerning emergency treatment and others by ambulance team members (under public notice from the Fire and Disaster Management Agency in 1978 No. 2)
- Article 6-3 of the standards: an ambulance team member who has an emergency life-saving technician license shall engage in first-aid treatment under the Emergency Life-Saving Technicians Act
- The Emergency Life-Saving Technicians Act defines two types of treatment: emergency life-saving treatment under comprehensive direction of a doctor based on Article 2 and emergency life-saving treatment (specific treatment) that requires specific direction from a doctor based on Article 44
- The range of emergency life-saving treatment stipulated in the Emergency Life-Saving Technicians Act has been expanded six times up until 2014.

Number of Ambulance Teams and Operating Situation of Emergency Life-saving Technicians

- An ambulance team is composed of three or more ambulance team members who have completed a course of ambulance training. As of April 1st, 2014, 5,028 teams have been set up across the country, and 60,634 ambulance team members are in operation (23,560 of these are emergency life-saving technicians).
- The Fire and Disaster Management Agency promotes training for emergency life-saving technicians with the aim of providing each and every ambulance team throughout the country with at least one emergency life-saving technician. As of April, 2014, 4,897 teams (97.4%) with an emergency life-saving technician(s) are in operation.
- Emergency life-saving technicians provide advanced emergency treatment to injured or ill persons who are suffering cardiopulmonary arrest under specific directions of a doctor.

○ Operating situation of emergency life-saving technicians



Emergency Life-Saving Technicians Act

[Restriction of specific treatment]
Article 44 **An emergency life-saving technician shall not perform emergency life-saving treatment specified by Ordinance of the Health, Labour and Welfare Ministry without specific directions of a doctor.**

Prerequisite for specific treatment

■To inform the doctor of any necessary information required for the provision of specific directions to an emergency life-saving technician

(Reference) Necessary information includes general condition (such as blood pressure and body temperature), electrocardiogram, and breathing condition.

■To always maintain cooperation between the doctor and the emergency life-saving technician

Detailed explanation of "Emergency Life-Saving Technicians Act" (Dai-ichi Hoki)

Content of specific treatment

○To patients in cardiopulmonary arrest

- **Defibrillation using a semi-automatic defibrillator** → **Comprehensive direction on defibrillation (in 2003)**
- **Transfusion to secure an intravenous line using medicines designated by the Minister of Health, Labour and Welfare**
- **Securing an airway using tools designated by the Minister of Health, Labour and Welfare** → **Addition of endotracheal tube (in 2004) Addition of video laryngoscope (in 2011)**
- **Administration of medicine using epinephrine** → **Added (in 2006)**

○ To patients before cardiopulmonary arrest

- **Administration of glucose solution to cases of hypoglycemic attack**
- **Transfusion and securing of an intravenous line using medicines designated by the Minister of Health, Labour and Welfare**

→ **Added (in 2014)**

Circumstances behind Expanding the Range of Treatment by Emergency Life-saving Technicians

1991 — **Emergency Life-Saving Technicians Act was enforced**

1. Treatments under specific directions of a doctor (specific treatment)

→ To be performed only on patients in cardiopulmonary arrest

- Transfusion for securing an intravenous line using lactated Ringer's solution
- Securing an airway using tools such as a laryngeal mask
- Defibrillation using a semi-automatic defibrillator (→ until 2003)

2. Treatments under the comprehensive direction of a doctor

→ To be performed on severely injured or ill persons (including patients in cardiopulmonary arrest)

- Treatment in the field of psychiatry
- Treatment in the field of pediatrics
- Treatment in the field of obstetrics and gynecology
- Listening to cardiac and respiratory sounds using a stethoscope
- Blood pressure measurement using a sphygmomanometer
- Observation of cardiac beats using an electrocardiograph, and transmission of an electrocardiogram
- Removing foreign matter in the throat or upper glottis using forceps or an aspirator.
- Securing an airway using the nasal airway
- Measuring blood oxygen saturation using a pulse oximeter
- Maintaining blood pressure and fixing the lower limbs using pneumatic anti-shock garments
- Providing chest compression using an automatic cardiac massage device
- Maintaining the treatment of injured or ill persons who continue with specific treatment at home
- Intra oral suction
- Securing an airway using the oral airway
- Artificial respiration using a bag valve mask
- Oxygen administration using an oxygen inhaler

2003 Shifted “Defibrillation using an automated external defibrillator (AED)” from 1. to 2.

2004 Added “Securing an airway using an endotracheal tube” (tracheal intubation) to 1.

2006 Added “Administration of epinephrine” to 1.

2009 Added “Administration of epinephrine using a preparation of epinephrine that enables self-injection” to 2.

2011 Added “Tracheal intubation using a laryngoscope for rigid intubation video” to 1.

2014 Added “Transfusion for securing an intravenous line using lactated Ringer's solution before cardiopulmonary arrest” and “Administration of glucose solution in cases of hypoglycemic attack” to 1.
Added “Blood sugar measurement using instruments for measuring blood sugar level” to 2.

Emergency Life-saving Treatments by Emergency Life-saving Technician

Comprehensive direction of a doctor (applicable only to emergency life-saving technicians)

Specific direction of a doctor (specific treatment) emergency life-saving treatment specified by the ordinance

- Transfusion for securing an intravenous line using lactated Ringer's solution
- Securing an airway by esophageal obturator airway, laryngeal mask, and endotracheal tube (*)
- Administration of medicines using epinephrine (*)
- **Administration of glucose solution to cases of hypoglycemic attack**
- **Transfusion and securing of an intravenous line using lactated Ringer's solution before cardiopulmonary arrest**

* Indicates treatment only for patients in cardiopulmonary arrest

- Treatment in the field of psychiatry
- Treatment in the field of pediatrics
- Treatment in the field of obstetrics and gynecology
- Defibrillation using an automated external defibrillator
- Administration of epinephrine using a preparation of epinephrine that enables self-injection
- **Blood sugar measurement using an instrument for measuring blood sugar level**
- Listening to cardiac and respiratory sounds using a stethoscope
- Blood pressure measurement using a sphygmomanometer
- Observation of cardiac beats using an electrocardiograph, and transmission of an electrocardiogram
- Removing foreign matter in the throat or upper glottis using forceps or an aspirator.
- Securing an airway using the nasal airway
- Measuring blood oxygen saturation using a pulse oximeter
- Maintaining blood pressure and fixing the lower limbs using pneumatic anti-shock garments
- Provide chest compression using an automatic cardiac massage device
- Maintaining the treatment of injured or ill persons who continue specific treatment at home
- Intra oral suction
- Securing an airway using the oral airway
- Artificial respiration using a bag valve mask
- Oxygen administration using an oxygen inhaler
- Throat suction through an endotracheal tube
- Defibrillation using an automated external defibrillator
- Securing an intravenous line manually
- Chest compression
- Artificial respiration using expired air breathing
- Astriction
- Fixation of bone fractures
- Removing foreign matter using the Heimlich maneuver or the back blow method
- Observation of body temperature, pulse, respiration rate, consciousness, and complexion
- Maintaining necessary posture, staying quiet, and keeping warm

Ordinary people can also perform

First-aid treatment (an ambulance team member)

Emergency life-saving treatment (emergency life-saving technician)

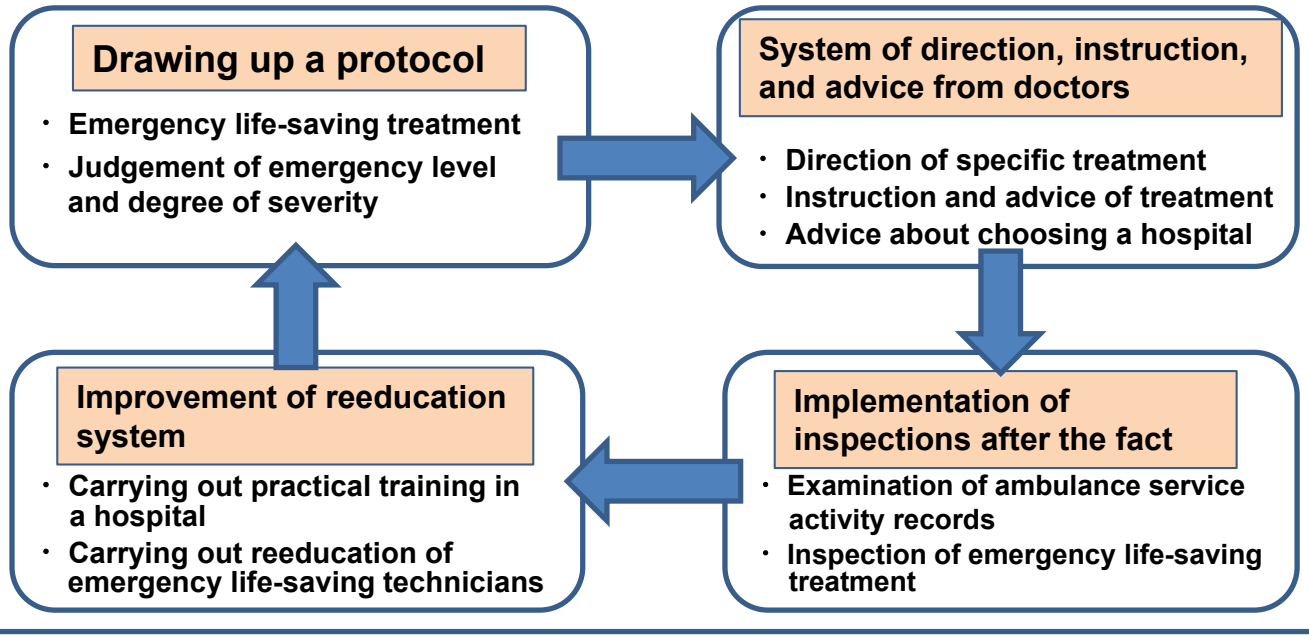
Medical Control Systems

○ Aiming to improve the quality of emergency life-saving treatment, medical control systems need to be reinforced to secure quality from a medical perspective. As of October 1st, 2014, there are 248 medical control conferences held by each region.

○ The Fire and Disaster Management Agency (Ambulance service planning office) is in charge of general affairs of the national medical control conferences network, and holds a conference with the aim of reinforcing and strengthening medical control systems.

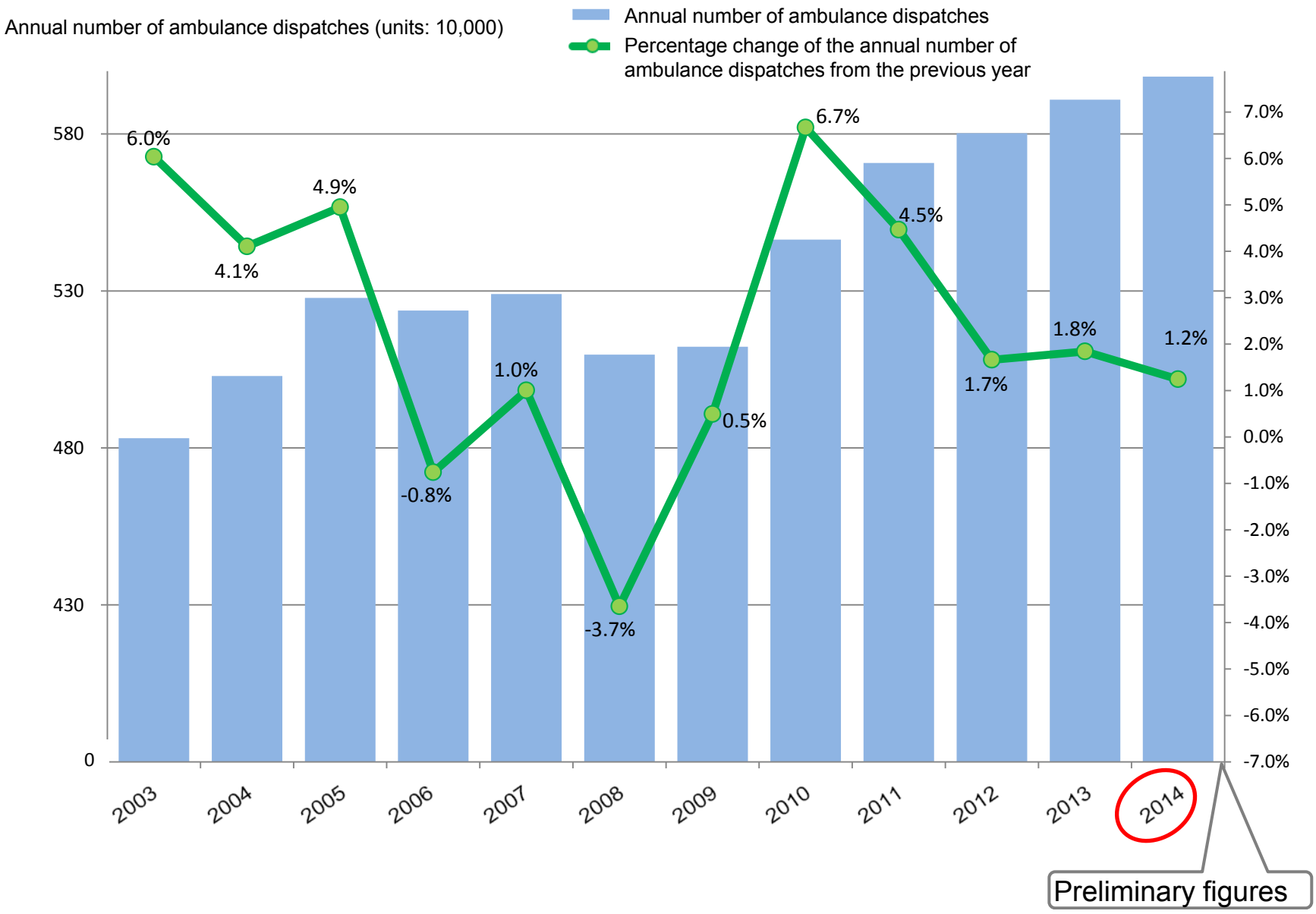
Outline of medical control conferences

【Conference members】
- Fire organizations
- Medical Association and others
- Doctors working at critical care center and others
- Prefectural government (Fire and Disaster Prevention Department, Sanitation Department)



Increasing Demand for Ambulance Services

Trend in the number of ambulance dispatches and percentage change from the previous year

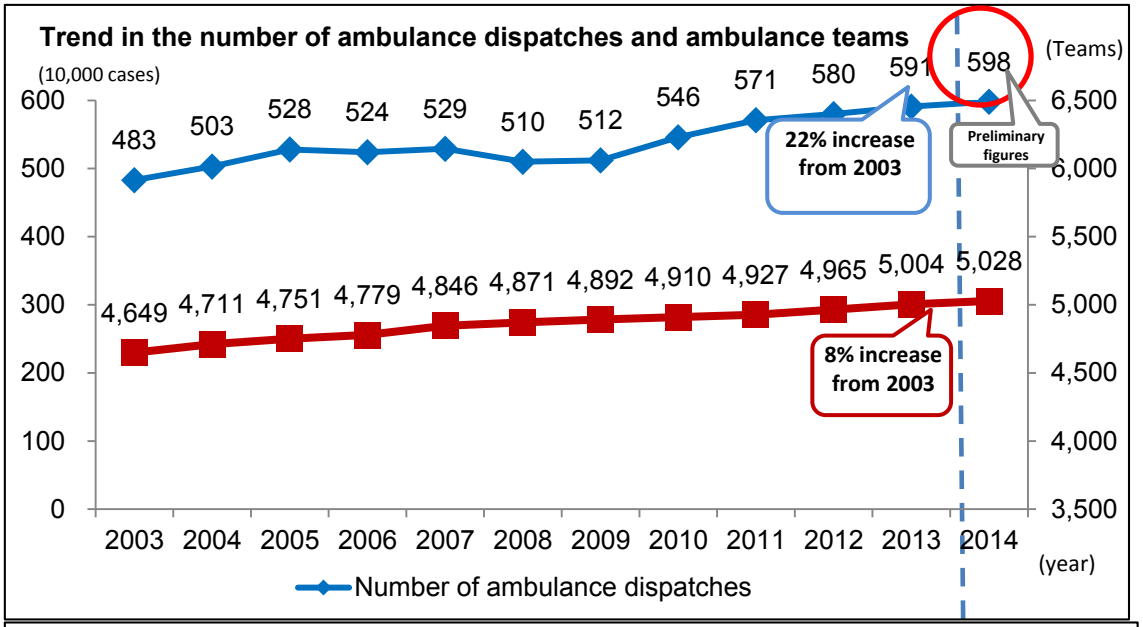


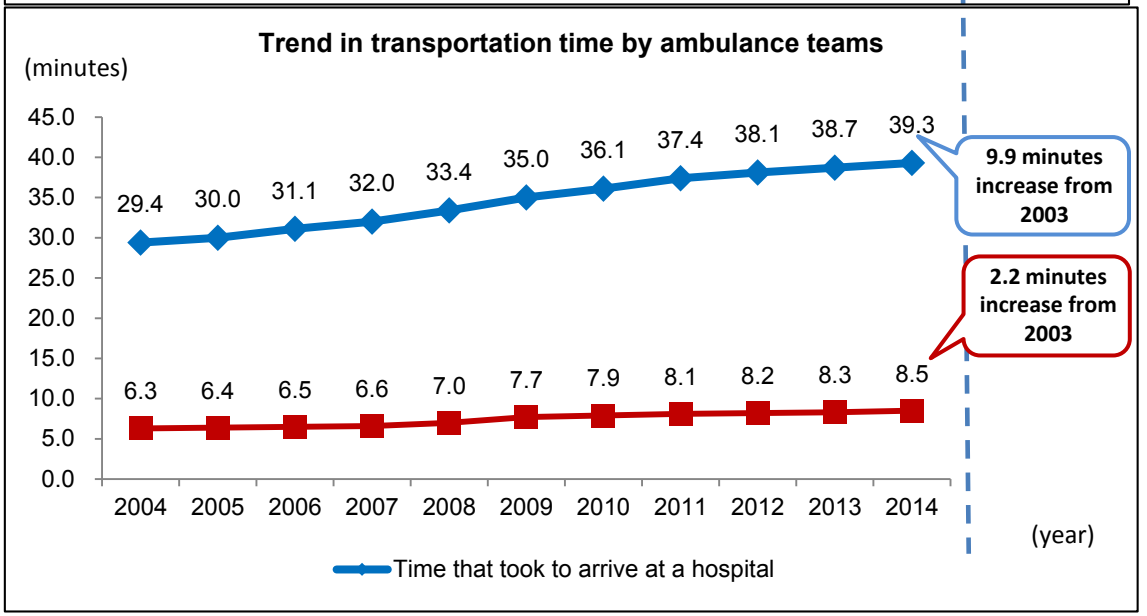
Increasing Demand for Ambulance Services

- Number of ambulance dispatches in preliminary figures reached 5.98 million cases in 2014, which broke the record for the most dispatches.
  Comparing the exact figure in 2013 with that of ten years ago, it increased by approximately 22% in a decade. On the other hand, the number of ambulance teams stayed at roughly an 8% increase.

- National average time taken to arrive at a hospital was 39.3 minutes (38.7 minutes in previous year), which was the longest time ever.

- The average time taken to arrive at sites in 2013 was 8.5 minutes, which had increased by 2.2 minutes in a decade.

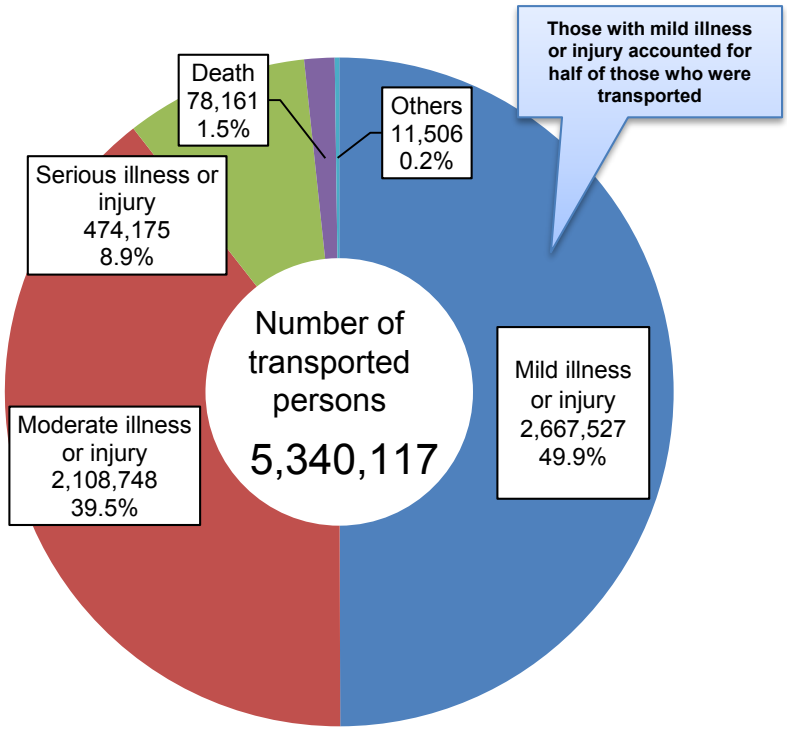




[Current Situation of Emergency Transportation (1)]

- Persons with a mild illness or injury accounted for half of those who were transported to medical institutions by ambulance in 2013.
- The situation of the number of those transported by age group shows that the number of elderly persons is tending to increase.

○ Number of those transported by degree of illness or injury



○Number of transported persons by age group and by degree of illness or injury

Age group / Degree of illness or injury	Newborn	Baby and toddler	Juvenile	Adult	Senior	Total
Death	77 (0.6)	478 (0.2)	277 (0.1)	14,814 (0.7)	62,515 (2.1)	78,161 (1.5)
Serious illness or injury	2,161 (15.9)	4,298 (1.7)	4,673 (2.3)	119,468 (6.1)	343,575 (2.1)	474,175 (8.9)
Moderate illness or injury	9,462 (69.6)	52,826 (21.0)	45,316 (22.5)	625,672 (31.8)	1,375,472 (47.7)	2,108,748 (39.4)
Mild illness or injury	1,802 (13.2)	192,804 (76.6)	150,331 (74.7)	1,207,553 (61.2)	1,115,037 (38.4)	2,667,527 (49.9)
Others	90 (0.7)	1,200 (0.5)	785 (0.4)	4,926 (0.2)	4,505 (0.2)	11,506 (0.2)
Total	13,592 (100.0)	251,606 (100.0)	201,382 (100.0)	1,972,433 (100.0)	2,901,104 (100.0)	5,340,117 (100.0)

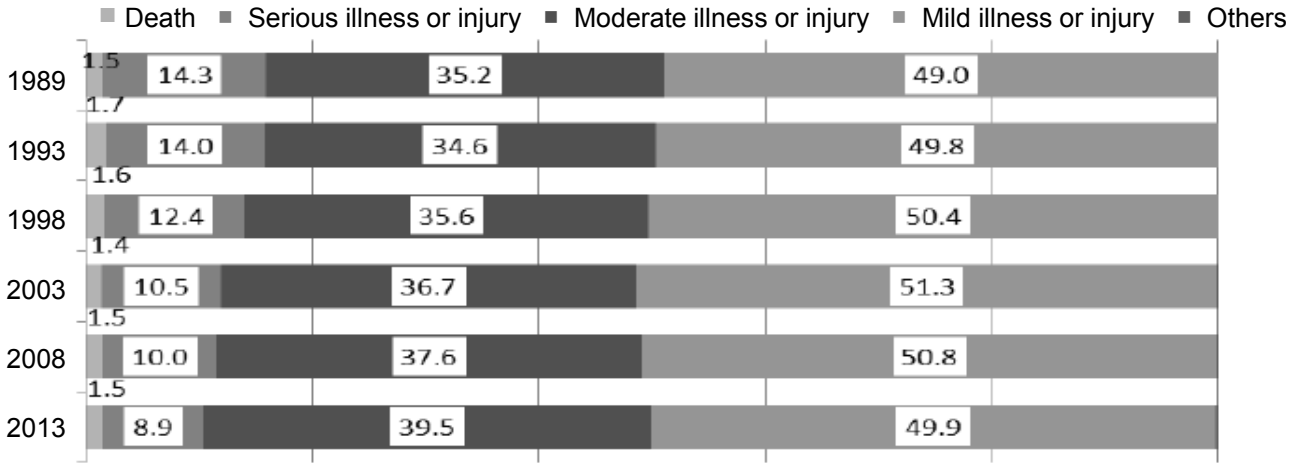
(Note) The numbers shown in parentheses indicate component ratio by age group (units:%)

* Degree of illness or injury is classified into the following five categories based on the doctor's diagnosis at the first medical examination.

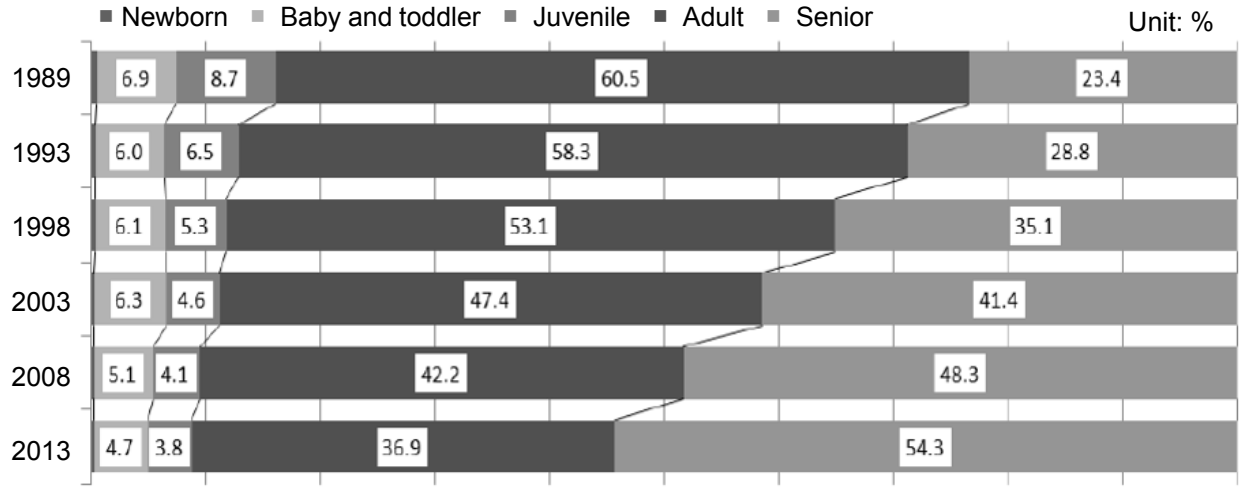
(1) Death refers to the situation in which a person is confirmed to be dead at the first medical examination.
(2) Serious illness or injury refers to an illness or injury which requires three weeks hospitalization for treatment.
(3) Moderate illness or injury refers to an illness or injury which is other than serious or mild.
(4) Mild illness or injury refers to an illness or injury which does not require hospitalization for treatment.
(5) Others include cases without a doctor's diagnosis, cases where the degree of injury or illness has not been confirmed, and cases where patients have been transferred to other locations.

[Current Situation of Emergency Transportation (2)]

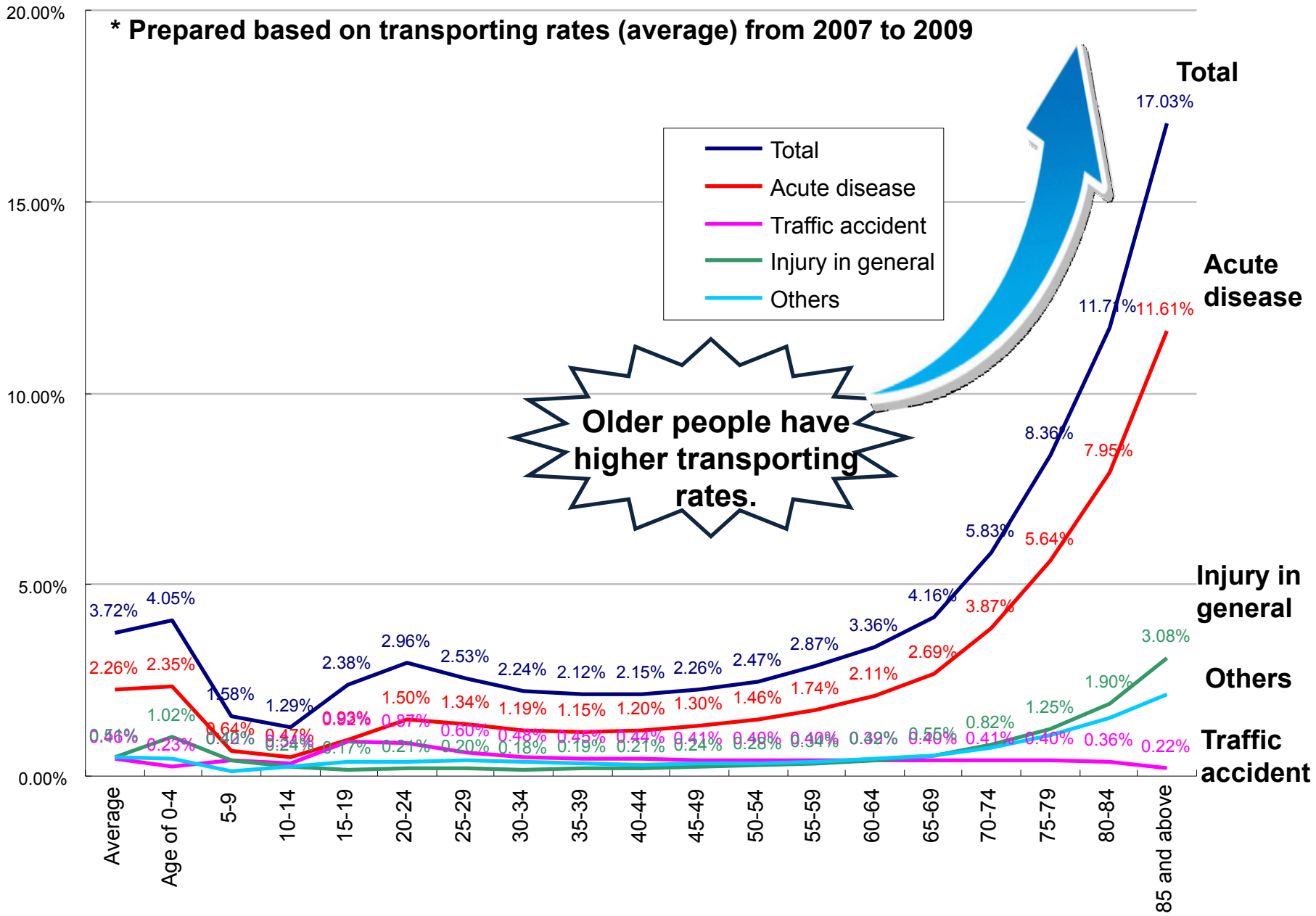
Trend in the component ratio of the number of transported persons by degree of illness or injury



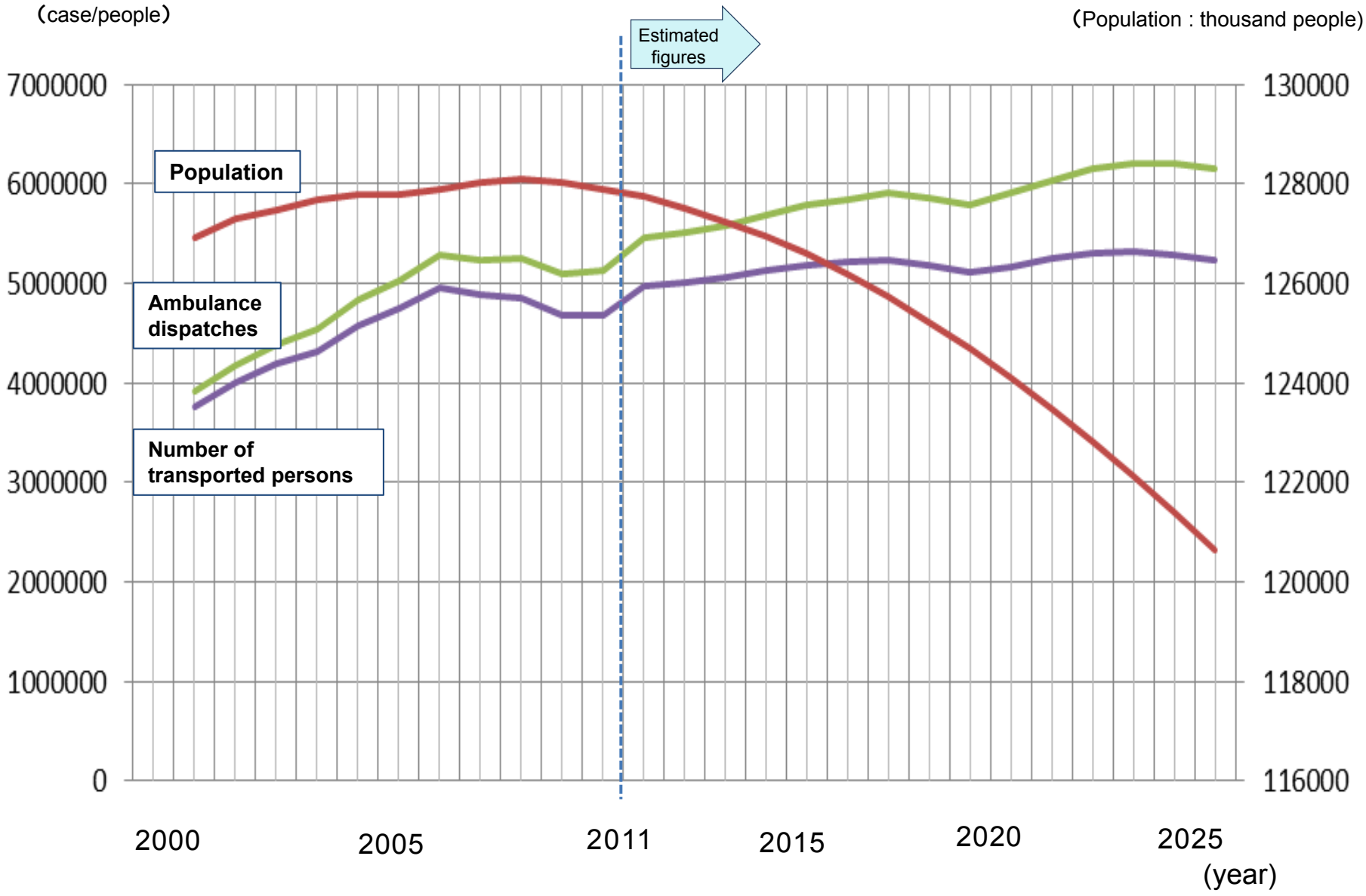
Trend in the component ratio of the number of transported persons by age group



Change in classification of accidents and transporting rate by age group



Trends in population, ambulance dispatches, number of transported persons, and future estimations (from 2000 to 2025)



Reference: The FY2012 report from the study council regarding ideal ambulance services