

EMS SYSTEMS IN TOKYO

Hideharu Tanaka MD, Ph D

Professor & vice-chairman Emergency system, Graduate school,
Kokushikan university

STRUCTURE OF TOKYO EMS



Ten fire districts, about 18,000 personnel are working for various fire departmental services.

Population : **12 591 643** people (Center **8 502 527** , Suburban **4 001 781** , Rural are **87 335**), Area **2,187.65**[km²](#) Density : **5,935**人/km²

ORGANIZATION

- Tokyo Fire Department (TFD) starting fire service on March 7, 1948,
- TFD responsible for entire Tokyo Metropolis include for the islands and mountain area.
- Service area is divided into ten fire districts, 18,000 personnel are working for various services.
- Budget for the year 2009 is 254,192,000,000 yen. This accounts for 3.9% of the Tokyo Metropolitan Government's general budget.

RESOURCES

消防職員 Personnel : 18,080人

消防吏員 Uniformed : 17,653人

消防吏員以外の職員 Non-uniformed : 427人

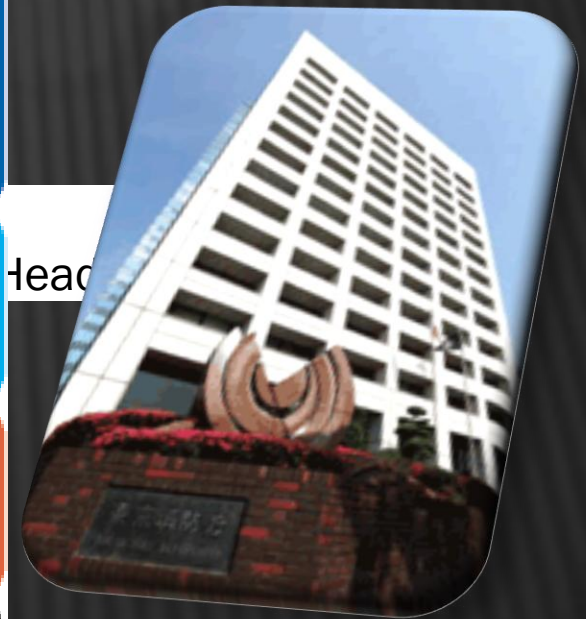
消防署
Fire Station
81署

消防分署
Fire Station Division
3分署

消防出張所
Fire Station Branch
207所

消防車両
Fire Apparatus
1,898台

平成22年4月1日現在 As of April 1, 2010



• 本部庁舎
Headquarters

RESOURCES OF TOKYO EMS



231 Fire station each station have ALS+BLS provide ambulance with EMS crew consist with 2 paramedic and 1 EMT basic



505 Fire engine truck provide with BLS by EMS crew

Total Number of EMT-B:373,
EMT-Paramedic:1694,

OTHER RESOURCES



Air operation:6 helicopter



Quick atacker:20 motorcycle



Water rescuei:9 ships



Quick Response Vehicle
As a commander:171

EMERGENCY HOSPITAL OF TOKYO

330 Hospital cooperation to the EMS

General ER:

- × 8 National hospital
- × 18 Municipal hospital
- × 20 Public hospital
- × 268 Private hospital

Special EMS:

Third level emergency center :23 institute

Burn network :13 institute

CCU network:62 institute

Pediatric & OBGY:25 institute

COMMAND CONTROL CENTER AND DISPATCH



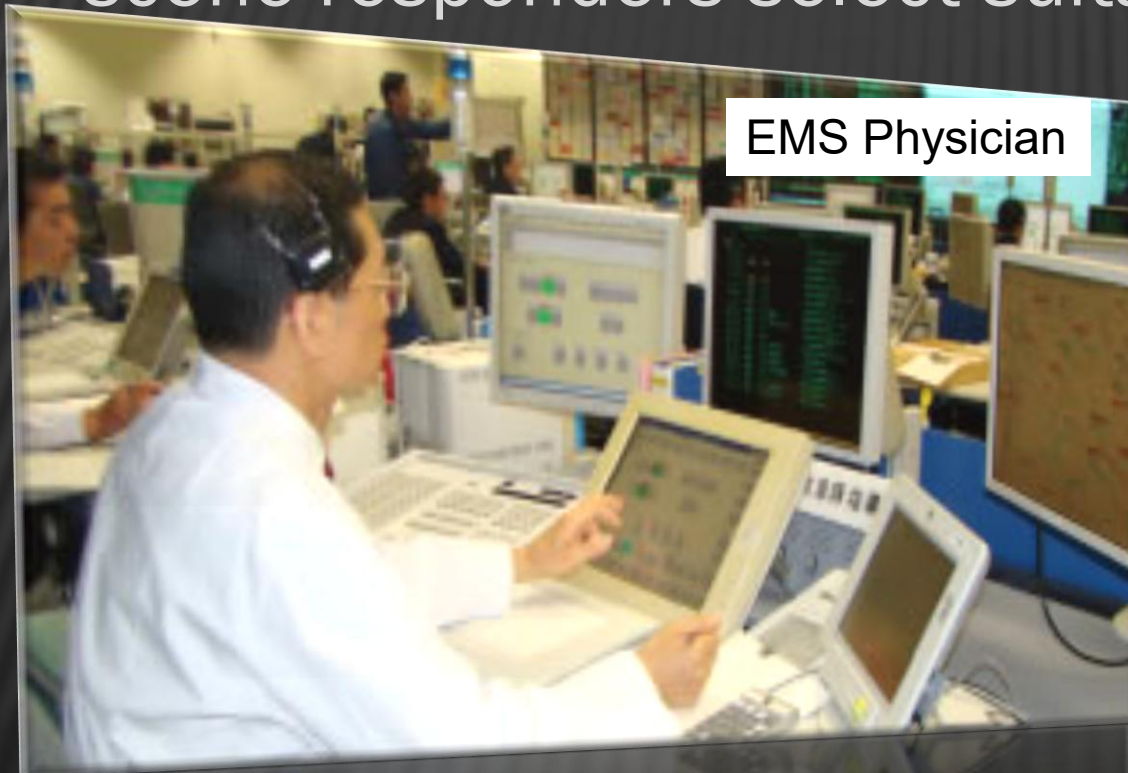
90fire fighter worked in CCC as a Dispatcher (Non-Certified)

- 119 emergency calls are received at the command and control centers of the TFD-one located in HQ in Chiyoda-ku for the calls from the 23-ward area, and the other in Tachikawa for those from the Tama area.

The operators dispatch fire trucks or ambulances from the fire stations close to the incident, or call them to the scene while those vehicles are moving on the road.

MEDICAL OVERSIGHT BY EMS PHYSICIAN (ON LINE MC)

- ✘ EMS doctors give ALS procedure instruction and advice to paramedics. They also help on-scene responders select suitable hospitals



EMS Physician

263
Registered
EMS Physician
From 31 main
Hospital Tokyo
Part time
cost:50 \$/hr

TOKYO MEDICAL CONTROL SYSTEM



Medical control
doctor in the
dispatch center

Standard order

Direct order



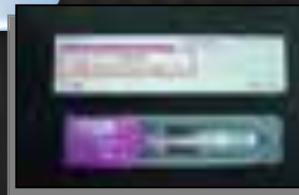
Defibrillation



Airway device and
ITT



Drug & IV



Tokyo Medical Control Council

Tokyo Medical Control Council
Medical director Dr S Shimazaki (Prof of Kokushikan univ)



Quality Assurance Quality Improvement Committees

Medical Control physician Committees

Standard Protocol Committees

EMS Personnel Education Committees

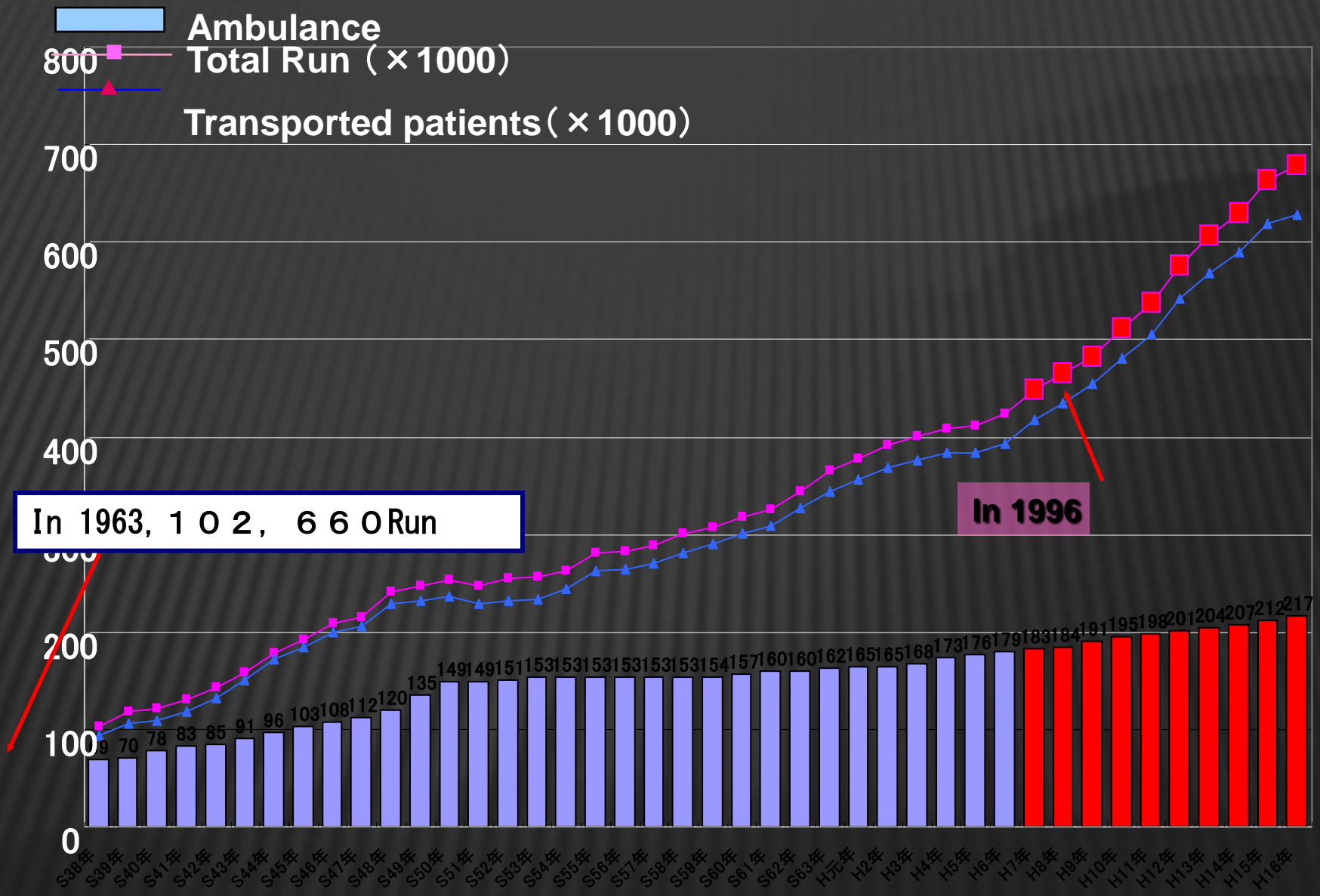
EMS CREW AND PARAMEDIC



With a growing number of senior citizens and people with lifestyle-related diseases, paramedics skilled in advanced life support care are assigned to all ambulance units. All EMS crew including paramedics do their best to treat patients while sending them to the hospital as soon as possible.

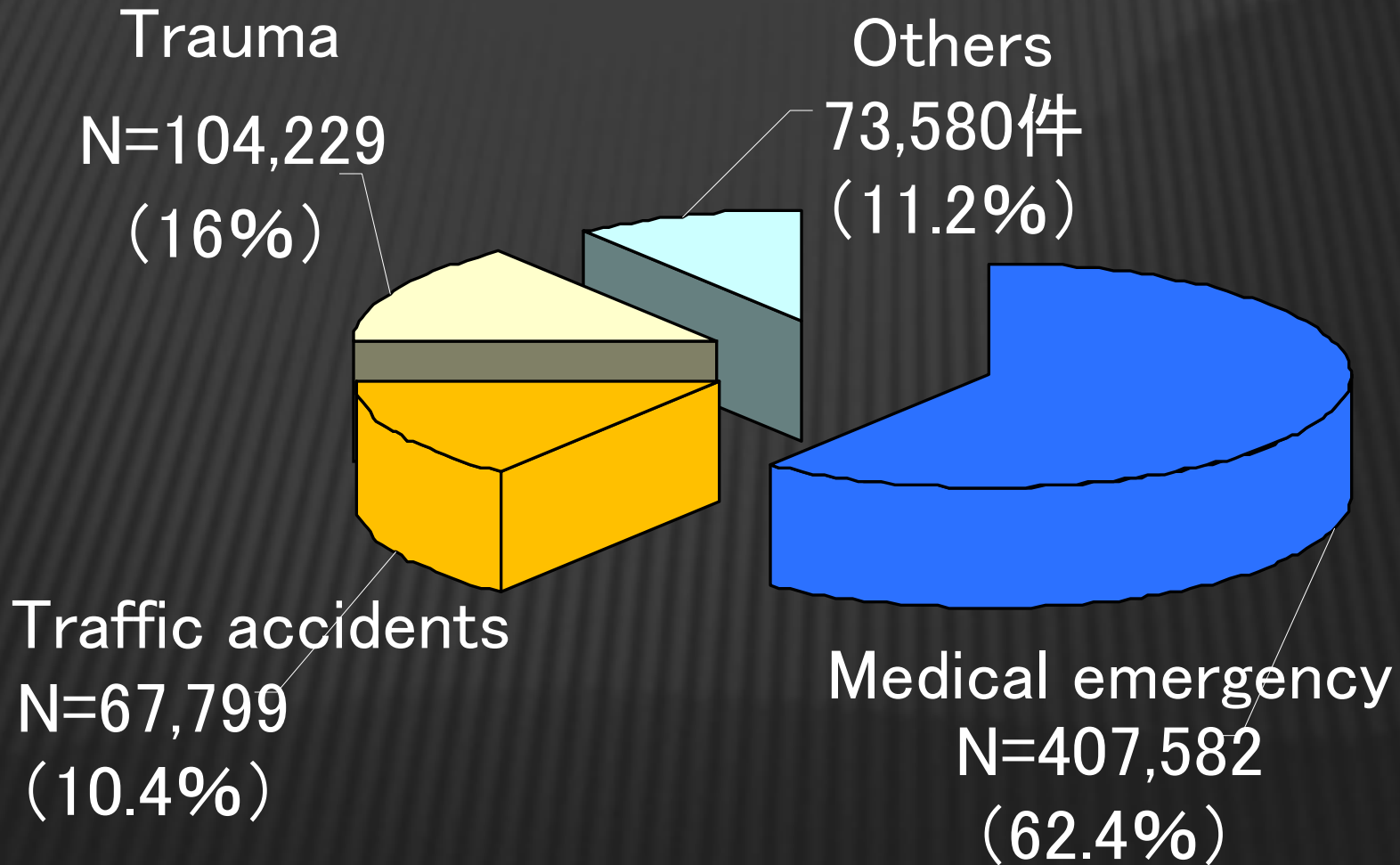


Trend of Transport patients in TOKYO FD

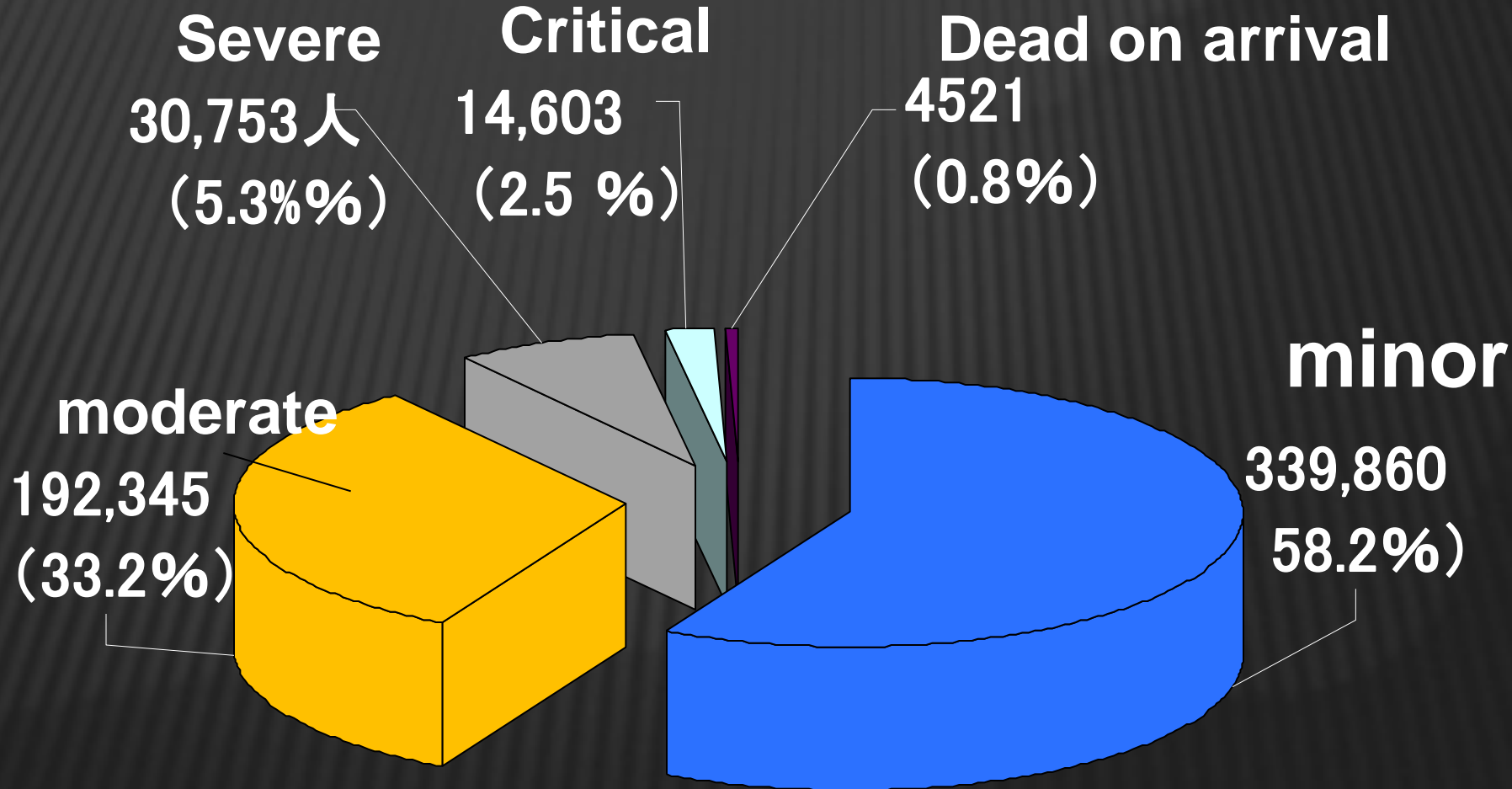


No of transportation (2008)

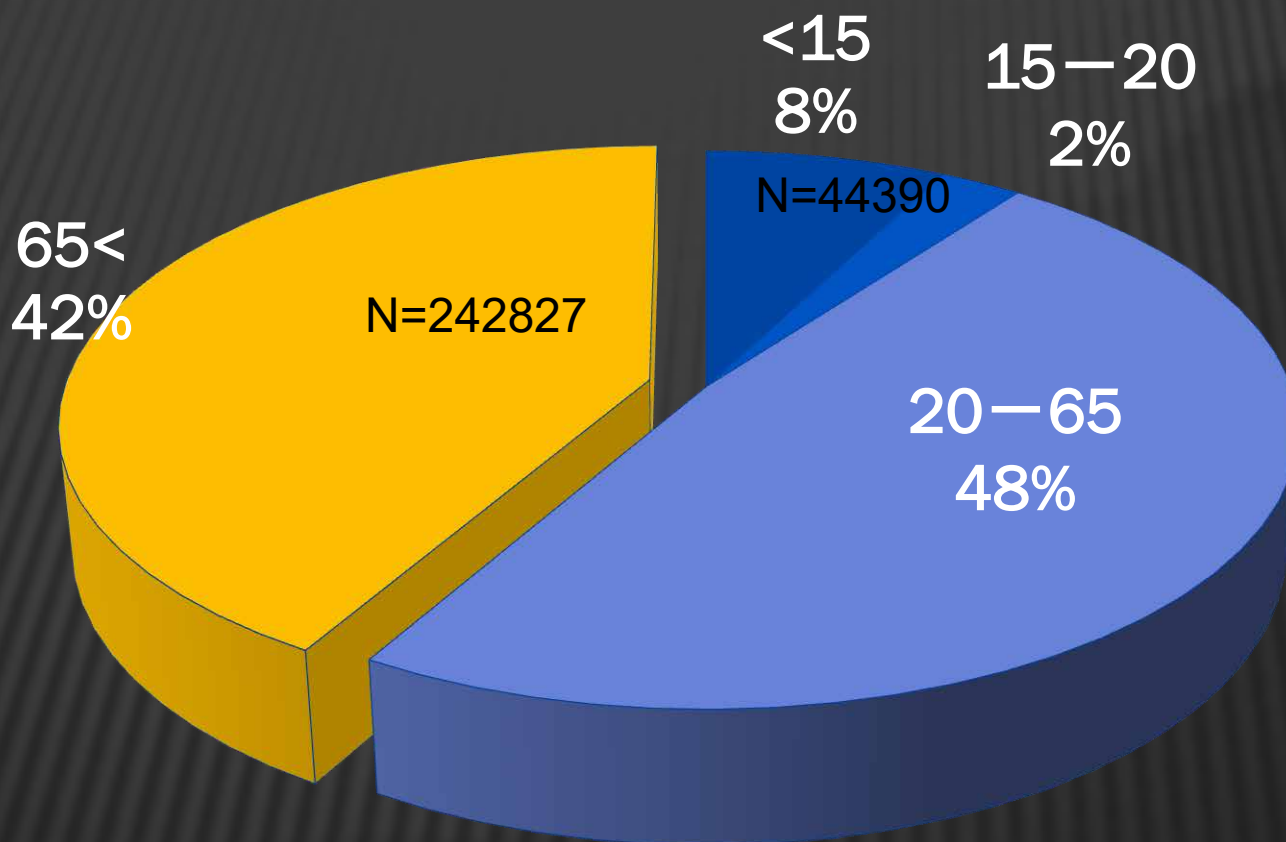
(653260 run ;Daily 1785 run)



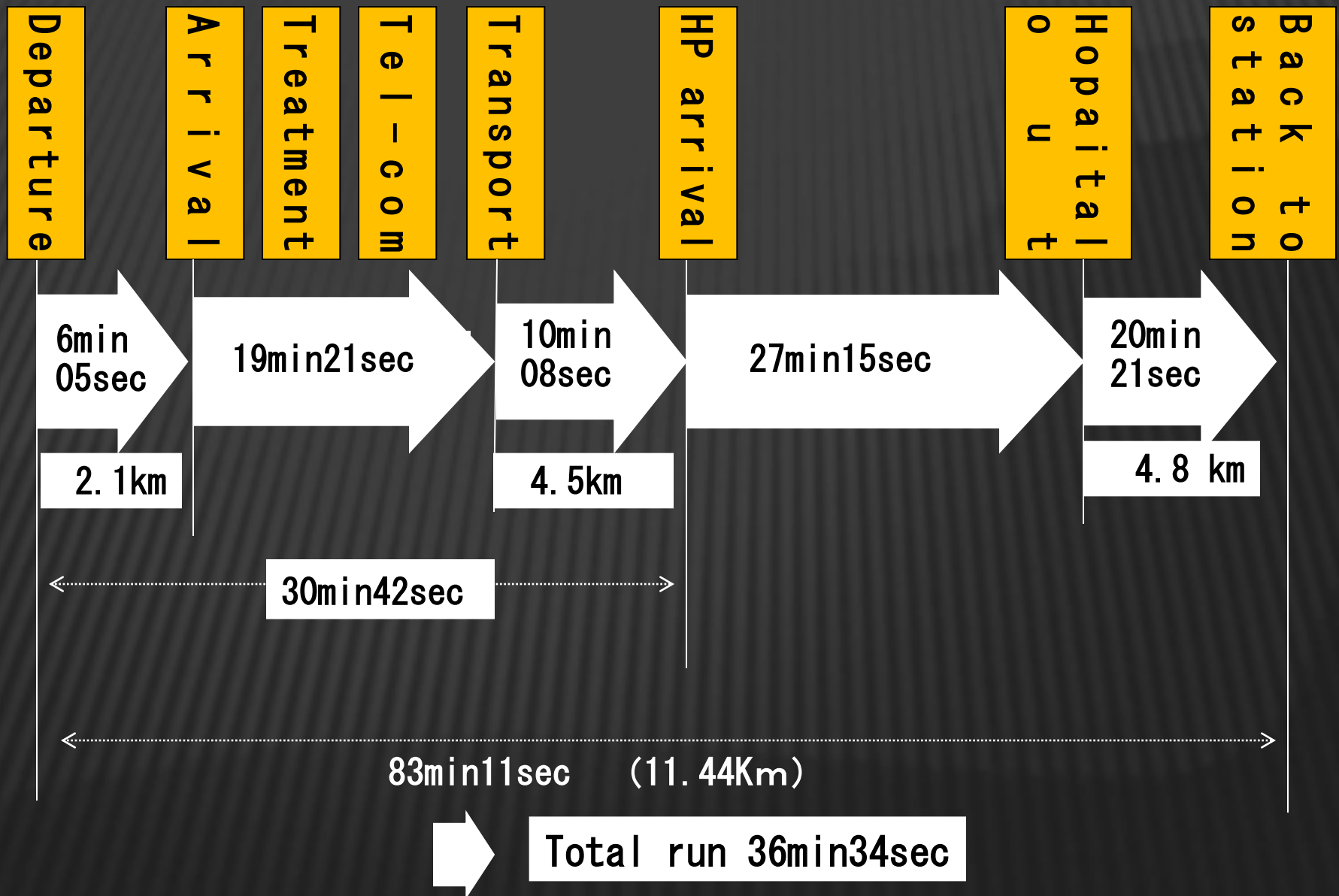
Patients by condition 2008 (n=583,082)



Age distribution of transported patients (2008)



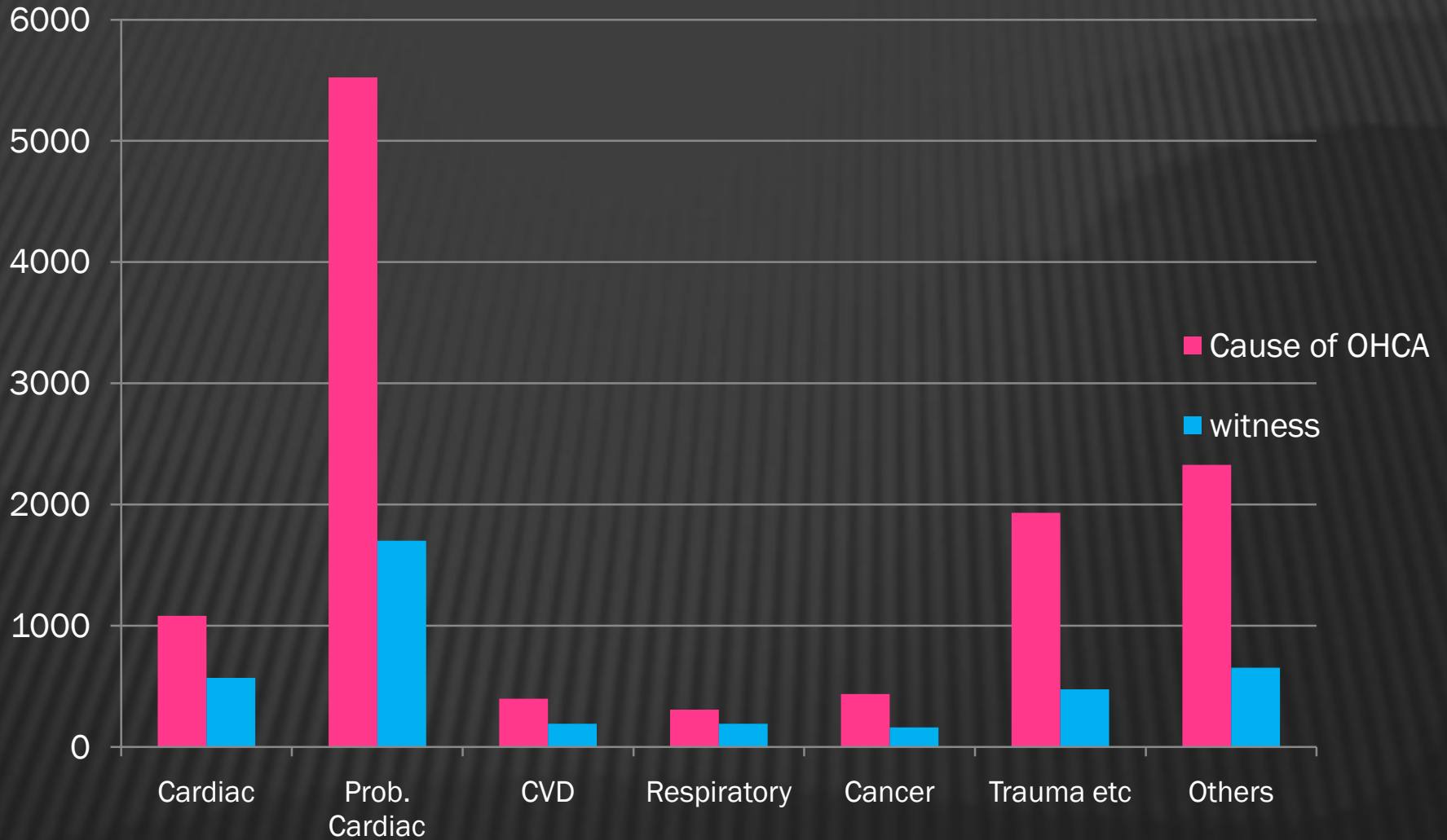
Time record of transportation (2008)



Place of OHCA (2008):12021 *arrest*

Place of OHCA	Number	Witness	By-CPR	By-AED	ROSC	1mo Survival
Home	8807	2517	1293	577	320	166
Nursing home	907	366	581	44	34	13
On the road	726	311	110	156	52	42
Station	248	123	90	73	35	18
Park	183	30	20	25	6	8
Office	180	77	48	50	25	18
Resturrant	111	73	222	32	13	4
Hotel	80	27	14	10	8	6
Hospital	75	44	44	15	7	3
Clinic	68	63	50	24	7	2
Public bath	65	20	26	6	5	1
Parking	57	15	8	11	2	1
construction spot	54	28	14	17	3	0
Food market	49	25	9	17	9	8
Sports stadium	39	30	26	29	15	14
Pachinco	38	21	7	15	3	2
Department store	28	16	14	8	2	2
School	26	12	12	9	3	4
public hall	22	18	5	5	5	3
Temple,shrine	22	9	6	6	2	1

Certain cause of OHCA



Outcome of OHCA in TOKYO FD

OHCA patients N=12021

Witnessed n=3904(32.4%)

Non-witnessed n=8177

**Shock
n=709(18.1%)**

**No Shock
n=3195**

**Shock
n=453**

**No Shock
n=7664**

ROSC n=198

ROSC n=220

ROSC n=50

ROSC n=104

**1mo GPC 1or 2
n=130**

**1mo GPC 1or 2
n=94**

**1mo GPC 1or 2
n=46**

**1mo GPC 1or 2
n=62**

- **Shock performed n=1152(9.7%) ROSC n=248 21.3 %,
1 mo. good GPC n=176 15.1%**

PARAMEDIC PROCEDURE

◆ 1991

1. Defibrillation with AED
2. IV lifeline and fluid administration
3. Airway maintenance with equipment

◆ 2004

End tracheal intubation

◆ 2006

Adrenalin administration

No of Paramedic Performance

	OHCA	Total Procedur e	L M A	Combi- tube	ITT	IV	DC
200 8	12,02 1	4865	1770	734	315	1023	1023
200 4	9, 3 0 7	3, 5 4 1	2, 2 2 5	1, 1 3 6	5 7	1 2 3	1, 0 6 7
200 0	8, 7 8 9	5, 0 8 2	1, 5 8 7	2, 3 2 9		5 6 4	6 0 2

※ 除細動については参考値

EARLY DEFIBRILLATION AS A PART OF EMS SYSTEM

	N	ROSC	VF response time
By-AED with witness	88	50 (56.8%)	4min 01 sec
By-AED without witness	48	14 (29.2%)	
By-AED with witness by EMS Crew	96	40 (41.7%)	2min56 sec
No By-AED with witness Shock by EMS Crew	527	109 (20.7%)	12min41 sec



AED 200 minutes training for Fire fighters & EMT-Bs

DISASTER MANEGEMNT



DISASTER MEDICINE WITH TOKYO DMAT

- ✖ In large disaster scenes, EMS units work jointly with the Tokyo Disaster Medical Assistance Teams (Tokyo DMAT).

Medical teams that are trained and specialized in the rapid on-site medical treatment in large-scale disasters such as earthquakes and train crashes.



活動中の救急隊員
EMS members at a
disaster scene

多数傷病者
発生時の救
急活動訓練
EMS
incident

東京DMATとの連
携
Working with the
Tokyo DMAT



EMERGENCY TELEPHONE CONSULTATION CENTER

- Emergency Telephone Consultation Center in the Tokyo Fire Department on June 1, 2007, where nurses and former EMT's respond to inquiries on the phone, getting advice from the doctor there on a 24-hour basis.
- The Center is managed jointly by EMS doctors, the Tokyo Medical Association, and the Bureau of Social Welfare and Public Health of Tokyo so that the quality of their medical advice and the Center's smooth management are ensured



EMERGENCY TELEPHONE COMMUNICATION CENTER



FIRST AID TRAINING TOKYO



training
cooperation
instructors in
places as well
by First-Aid
Association. The Department has
various educational tools available
for learners: the first-aid learning
program on the Internet and the
system for people with visual and
hearing difficulties developed by the
Tokyo Emergency First-Aid
Association.

平成20年中の救命講習等の実施状況
First Aid Training Course Give in 2008

各講習の受講人員
Number of Participants

	受講人員 Trainees
応急救護講習 Elective First Aid Course	592,832人
普通救命講習 Standard First Aid Course	164,934人
上級救命講習 Advanced First Aid Course	40,066人
その他の講習 [※] Other Courses [※]	4,762人
合計 Total	802,594人

※その他の講習は応急手当指導員、応急手当普及員、職場応急隊員及び救急特別区救急員講習

※Other Courses: First Aid Instructor's Course, Alarm Responder's Course, Private Non-emergency Ambulance Attendant's Course



終

UTSTAIN REGISTRY NATIONWIDE DATA IN JAPAN

- ✗ The data inputs 65 different category of OHCA
- ✗ The data already contain for Data PAROS study .
- ✗ The individual information data has been deleted by personal data protection
- ✗ We can use those of data base

Plus, political negotiation for is necessary

- ✗ Permission is necessary with FDMA and Implementation working (research)group from PAROS study group

HOW ACCESS TO LOCAL SITE DATA

National data

Metropolitan
Tokyo
11% NAGAO

Local Site

Osaka
10% IWAMI/
HIRAIDE

Aichi
6%
NOGUCHI

- ✘ Medical Director in Local site has been corrected data.
- ✘ We can also access local site at Tokyo, Osaka, Aichi (negotiated)
- ✘ Sapporo, Sendai, etc also available if needed