

DURING THE YEAR OF 1990 SYSCOM HANDLED A TOTAL OF 7,497 MEDEVACS.
3,786 CAME TO MIEMSS 2,736 WENT TO OTHER CENTERS 971 WERE CANCELED
WE WERE ON FLYBY A TOTAL OF 4071 HOURS 19 MINS OF A POSSIBLE _____ HOURS
WE HANDLED A TOTAL OF 86662 TELEPHONE CALLS 3985 RADIO CALLS
WE HANDLED A TOTAL OF 9826 PAGE REQUESTS GENERATED BY IN HOUSE REQUESTS
WE HANDLED A TOTAL OF 18256 PAGE REQUESTS GENERATED BY FROM OUT OF HOUSE
WE HANDLED A TOTAL OF 20,488 PAGES FOR ADMISSIONS
FOR A TOTAL OF 68,566 PAGES THRU THE SYSCOM OPERATION
297,803 WERE GENERATED BY PERSONEL ACCESSING THE PAGE TERMINAL
64 PATIENTS WERE TAKEN TO OTHER CENTERS AS A RESULT OF MIEMSS FLYBY

Total ambulance responses during C.Y. 1989 = 301,293

Total cardiac cases = 42,580

Cardiac cases were defined as any record with type of call reported as medical and at least one of the following:

1. Cardiac, chest pain, cpr or defibrillation marked
2. Any arrhythmia (excluding sinus rhythm) marked
3. Any drug (excluding epinephrine subcutaneous, narcan, or D50) marked

Total cardiac arrests = 3,592 (8.4% total cardiacs)

Arrests were defined as any cardiac case with one of the following:

1. Cardiac marked and one set of zero vital signs
2. Cpr or defibrillation marked
3. Ventricular fibrillation or coarse ventricular fibrillation or fine ventricular fibrillation marked and both sets of vital signs blank
4. Epinephrine I V marked and both sets of vitals blank

Total ventricular fibrillation cases = 1,228 (2.8%)

1. Any cardiac case with ventricular fibrillation or coarse ventricular fibrillation or fine ventricular fibrillation reported

Total defibrillation cases = 1,456 (3.4%)

1. Any cardiac case with defibrillation reported

Total asystole cases = 1,152 (2.7%)

1. Any cardiac case with asystole reported

Number of ALS providers

EMTP = 516	CRT = 1202	(including P.G. and Montgomery)
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EMTP = 340	CRT = 1054	(excluding P.G. and Montgomery)
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Since Prince Georges and Montgomery Counties data are not included in the MAIS, you may want to use the lower provider numbers.

December 7, 1990

TO: Beverly Sopp
FROM: Kathy Paez K.P.
RE: Cardiac data request

Attached is the cardiac data you requested for Dr. Ramzy's newsletter article. Calendar 1989 data was used for the analysis. If you have any questions, please feel free to call me.

cc: Ameen Ramzy, M.D.

Block grant.

State funds allocated to run state EMS office. No state funding.

State population. 4,300,000.
Number of licensed ambulance vehicles (public and private) in the state. 275.

Percent of state population covered by 9-1-1. 25%.

Numbers of EMS personnel. Currently state-certified Basic EMTs, 2,161; currently state-certified Intermediate EMTs, 270; currently state-certified Paramedics, 206.

Numbers of EMS services. Fire department (paid), 9; fire department (volunteer), 17; private ambulance services, 51; municipal, 15; hospital-based, 13; law enforcement, 9; subscription, 2; funeral home, 9; air ambulance, 7; military, M.A.S.T. units available as requested.

Statewide uniform ambulance reporting form. No.

Description of statewide data gathering system. No system in use at this time.

MAINE

Kevin McGinnis,
Executive Director
Office of Emergency Medical
Service
Board of Emergency Medical
Services

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Augusta, ME 04330
207/289-3953

Basic EMT. Skills include: all skills taught in standard DOT-approved Basic EMT course, plus the application of pneumatic anti-shock garments and the maintenance of already-started IV lines containing no medications. **Hours of training:** 110. **Certification requirements:** Successful completion of DOT-approved course for Basic EMTs. CPR certification and certification of affiliation with a licensed ambulance or first responder service. **Recertification requirements:** Triennial successful completion of Basic EMT course or approved refresher course or approved continuing education, and passing of state written and practical test required.

Intermediate EMT. Skills include: EOA, IV therapy, limited to unmedicated solutions, and defibrillation of ventricular fibrillation or cardiac standstill. **Hours of training:** 12-EOA, 18-IV, 12-defibrillation. **Certification requirements:** Regional medical control physicians set local standards. **Recertification requirements:** Currently under rule-making review.

Paramedic. Skills include: Chest decompression, transtracheal insufflation, cricothyrotomy, administration of medication, use of central approaches for IV therapy, endotracheal intubation, interpretation of cardiac rhythms and the delivery of external countershock using a cardiac monitor/defibrillator. **Hours of training:** 200. **Certification requirements:** Annual certification of CPR and of affiliation with an ambulance or first responder service licensed to the paramedic level. Annual certification by regional medical director of compliance with regional paramedic protocols and local recertification requirements. **Must recertify:** Currently under rule-making review.

Responsible certification agency. State Board of Emergency Medical Services. The certification group includes a physician. State law requires a medical director for each EMS system.

Reciprocity. Maine will issue a one-year Basic EMT license to any bearer of an out-of-state Basic EMT license, as

long as the out-of-state licensee was trained according to the Standard DOT EMT Curriculum, and that the state issuing the license imposed a written and practical exam as a condition of issuing its license. No automatic reciprocity is granted to any Paramedics other than possibly their Basic EMT license. Out-of-state Paramedic credentials will be promptly reviewed, but if acceptable, Paramedic candidates must pass state Board written and practical tests for licensure to the Paramedic level.

Salary ranges. The Maine EMS office does not monitor or regulate EMT salaries. A list of services will be sent to persons interested in contacting potential employers themselves.

Number of permanent state EMS office staff members. 6.

Federal/government funding. Block Grant, \$394,000; Medicaid, \$14,000.

State funds allocated to run state EMS office. \$74,000.

Unique funding methods. Two regional councils operate regional microwave transmission facilities. Frequencies not utilized by the EMS system in the region are leased to law enforcement and other agencies.

State population. 1,200,000.

Number of licensed ambulance vehicles (public and private) in the state. 320.

Percent of state population covered by 9-1-1. 25%.

Numbers of EMS personnel. Currently state-certified Basic EMTs, 1,980; currently state-certified Intermediate EMTs, 181; currently state-certified Paramedics, 58; emergency department physicians, 50; emergency department nurses, 250.

Numbers of EMS services. Fire department (paid), 29; fire department (volunteer), 40; volunteer squads, 32; private ambulance services, 28; municipal, 13; hospital-based, 11; law enforcement, 2; subscription, 0; contract, 0; funeral home, 1; air ambulance, 2; industrial, 2; military, 1; civil defense, 1; Indian reservations, 2.

Current legislation. The central authority of emergency medical services has been vested in the Board of Emergency Medical Services. Legislation also mandated licensure at the Basic EMT level to be for 3 years, and relieved Advanced EMTs of the burden of maintaining separate Basic EMT licenses. Other legislation required all EMS personnel to report cases of suspected child abuse and granted them immunity from civil liability for good faith reporting of suspected cases of child abuse. Immunity from civil liability was also granted to EMS personnel who make good faith reports to the State Police of persons they believed were operating a motor vehicle under the influence. Legislation also granted regional medical directors the authority over the disposition of care rendered to all accident victims or other persons requiring medical treatment.

Statewide uniform ambulance reporting form. Yes. This form is turned in to a central data gathering office.

Description of statewide data gathering system. The Maine Health Information Center's EMS Data Processing Unit gathers and tabulates run report data, and publishes quarterly and annual reports.

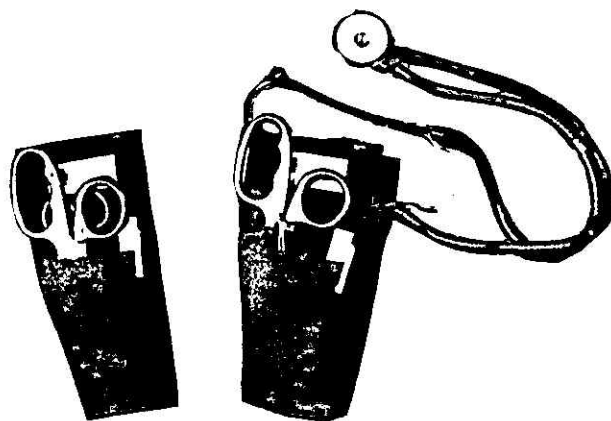
MARYLAND

R Adams Cowley, MD
Professor of Cardiovascular and
Thoracic Surgery



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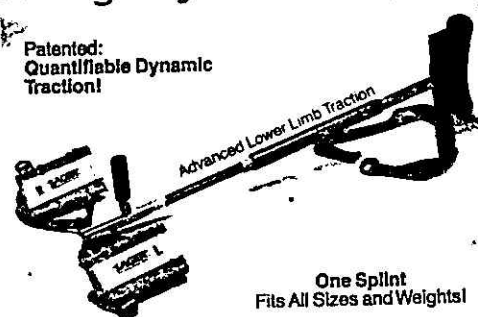
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Maryland Institute for Emergency
Medical Services Systems
22 S. Greene St.
Baltimore, MD 21201
301/528-5085

Basic EMT. Skills include: Patient assessment; bleeding control and bandaging; shock management; fracture management; O₂ administration; CPR; medical emergency management; spinal immobilization. **Hours of training:** 110 minimum. **Certification requirements:** 70% written exam; 3-station practical exam. **Recertification requirements:** Every 3 years through a formally approved EMT-A refresher program. We have reciprocity for EMT-A with most states and National Registry.

Cardiac Rescue Technician: Skills include: DOT Modules I-VI and XV. **Hours of training:** Basic EMT hours plus 160 hours. **Recertification requirements:** 20 hours of continuing education a year. **Aviation Trauma Technician: Skills include:** DOT Modules I-IX, XII, and XV. **Hours of training:** Basic EMT hours plus 240 hours. **Recertification requirements:** 40 hours of continuing education every two years.

Paramedic. Skills include: all 15 DOT Modules. **Hours of training:** Basic EMT hours plus a minimum of 300 hours. **Recertification requirements:** Same as National Registry.

Responsible certification agency. The Maryland Institute for Emergency Medical Services Systems (MIEMSS) certifies EMTAs. The Maryland Board of Medical Examiners, through MIEMSS, certifies CRTs, ATTs, and EMTs. This agency has a physician medical director. Each jurisdiction with ALS program is required to have a physician medical advisor.

Reciprocity. Equal training and testing based on national DOT objectives.

Salary ranges. Basic EMT: \$10,000/year to \$15,000/year; Intermediate EMT: \$12,000/year to \$28,000/year; Paramedic: \$24,000/year to \$32,000/year.

Number of permanent state EMS office staff members. 80.

Federal/government funding. DOT Grants and Block grants.

State population. 4,500,000.

Number of licensed ambulance vehicles (public and private) in the state. Approximately 550.

Percent of state population covered by 9-1-1. 100%.

Numbers of EMS personnel. Currently state-certified Basic EMTs, 13,000; currently state-certified EOA/M.A.S.T., 7,000; currently state-certified Cardiac Rescue Technicians, 1,300; currently state-certified Aviation Trauma Technicians, 35; currently state-certified Paramedics, 200.

Numbers of EMS services. Fire department (paid), 10; private ambulance services, 30; municipal, 5; hospital-based, 0; law enforcement, 1; subscription, 0; contract, 0; funeral home, 0; air ambulance, 2; industrial, 0; military, 3; Civil Defense, 1.

Current legislation. Legislation enacted requiring certain communications notification in reference to inter-hospital air Med-Evac missions.

Statewide uniform ambulance reporting form. Yes, 100% participation. This form is turned in to a central data gathering office.

Description of statewide data gathering system. Monthly reports sent to companies (100% participation). Use optical scanning system to load data from run sheets into computer system.

Important changes and develop-

ments within the last year. 1. \$4 million in state assistance provided directly to Maryland fire and ambulance companies. 2. Maryland-certified EMTs authorized to provide care. 3. A sixth Med-Evac helicopter base established by the Maryland State Police. 4. Mandatory seat belt use law enacted. 5. EMTA program increased from 84 hours to 110-hour national standard. 6. Construction started on new \$35-million Shock Trauma Center in Baltimore. 7. Additional state funding received by MIEMSS to enhance training programs and to initiate EMS communications system replacement and upgrading. 8. 19 of the 24 political jurisdictions now provide ALS services. 9. MIEMSS became a coordinating center for the National Disaster Medical System and coordinated a 600-casualty disaster exercise.

MASSACHUSETTS

Frank Kaslof, Director
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Office of Emergency Medical
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Basic EMT. Skills include: Airway management, CPR, bleeding control, splinting, spinal immobilization, oxygen administration, assessment, delivery techniques, transportation and general emergency care. Anti-shock garment use will be incorporated into all EMT courses in January 1987. **Hours of training:** Effective 1/1/85, 110-hour DOT curriculum as minimum. **Certification requirements:** Initial certification—pass course and state-administered written and practical examinations. **Recertification requirements:** Every two years via annual CPR certification, 20-hour refresher course and 48 additional hours of continuing education.

Intermediate EMT. Skills include: Basic EMT skills plus anti-shock trousers, esophageal obturator and/or endotracheal intubation and IV fluid replacement. **Hours of training:** 220. **Certification requirements:** Basic EMT certification, complete an approved I-course which includes: DOT curriculum Modules I-III, V, XV; clinical practicum: skill requirements; state exam; field internship—80-100 hours; demonstration of competency through evaluation and also minimum skills numbers. **Recertification requirements:** 30 hours refresher; annual CPR; demonstration of continued skill maintenance by annual physician evaluation of skills, and after skill evaluation, 40 additional hours of continuing education.

Paramedic. Skills include: IV, ETT (or EOA), M.A.S.T., cardiac monitoring, defibrillation, drug therapy, pediatric and neonatal care. **Hours of training:** 800-1,500. **Certification requirements:** Basic EMT certification, ACLS and CPR certification, completion of state-approved course which includes full 15 DOT Module curriculum, clinical practicum during which students demonstrate skill performance and rotations in ED, IV, or OB/GYN, PEDS, neonatal and psychology. Field internship minimum 80 hours, also demonstrate skill performance through evaluation and completion of minimum skill numbers. **Recertification requirements:** 48 hours of refresher courses, annual CPR, refresher ACLS, after physician evaluation of skills and ACLS, an additional 37 hours of continuing education.

Responsible certification agency.

STATE SURVEY

under rule-making review.

Responsible certification agency. Maine Board of Emergency Medical Services. The certification group includes a physician. State law requires a medical director for each EMS system.

Reciprocity. Maine will issue a one-year Basic EMT license to any bearer of an out-of-state Basic EMT license, as long as the out-of-state licensee was trained according to the Standard DOT EMT Curriculum, and that the state issuing the license imposed a written and practical exam as a condition of issuing its license. No automatic reciprocity is granted to any Paramedics other than possibly their Basic EMT license. Out-of-state Paramedic credentials will be promptly reviewed, but if acceptable, Paramedic candidates must pass state Board written and practical tests for licensure to the Paramedic level.

Number of permanent state EMS office staff members. 6.

Federal/government funding. Block Grant, \$394,000.

State funds allocated to run state EMS office. \$321,000 (includes regional program offices).

Unique funding methods. Two regional councils operate regional microwave transmission facilities. Frequencies not utilized by the EMS system in the region are leased to law enforcement and other agencies.

State population. 1,200,000.

Number of licensed ambulance vehicles (public and private) in the state. 320.

Percent of state population covered by 9-1-1. 25%.

Numbers of EMS personnel. Currently state-certified Basic EMTs: Basic LAAs, 609; Basic EMTs, 1,229; EMT/EOA, 313; currently state-certified Intermediate EMTs, 248; currently state-certified Paramedics, 110; emergency department physicians, 50; emergency department nurses, 250.

Numbers of EMS services. Fire department (paid), 29; fire department (volunteer), 40; volunteer squads, 32; private ambulance services, 28; municipal, 13; hospital-based, 11; law enforcement, 2; subscription, 0; contract, 0; funeral home, 1; air ambulance, 2; industrial, 2; military, 1; civil defense, 1; Indian reservations, 2.

Current legislation. Limitation of liability (\$10,000 personal, \$300,000 per service) for volunteer services and other nonprofit services subsidized by municipalities. Limitation of liability for medical directors, hospitals and their staffs providing clinical training for EMTs/AEMTs, EMS Instructors, and EMS regional councils. Mandatory hospital reporting of communicable disease contacts by ambulance/rescue personnel.

Statewide uniform ambulance reporting form. Yes. This form is turned in to a central data gathering office.

Description of statewide data gathering system. The Maine Health Information Center's EMS Data Processing Unit gathers and tabulates run report data, and publishes quarterly and annual reports.

Important changes and developments within the past year. Maine EMS was removed from Department of Human Services and is now governed by an authority, volunteer Board of EMS, which reports to the Governor's office directly. Major rules revisions underway to streamline rules and insure manageable flexibility.

MARYLAND

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and Thoracic Surgery
Director, Maryland Institute
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Ameen I. Ramzy, MD
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Basic EMT. Skills include: Patient assessment; bleeding control and bandaging; shock management; fracture management; O₂ administration; CPR; medical emergency management; spinal immobilization. **Hours of training:** 110 minimum. **Certification requirements:** 70 written exam; 3-station practical exam. **Recertification requirements:** Every 3 years through a formally approved EMT refresher program. We have reciprocity for EMTA with most states and National Registry.

Cardiac Rescue Technician: Skills include: DOT Modules I-VI and XV. **Hours of training:** Basic EMT hours plus 160 hours. **Recertification requirements:** 20 hours of continuing education a year.

Aviation Trauma Technician: Skills include: DOT Modules I-IX, XII, and XV. **Hours of training:** Basic EMT hours plus 240 hours. **Recertification requirements:** 40 hours of continuing education every two years.

Paramedic. Skills include: all 15 DOT Modules. **Hours of training:** Basic EMT hours plus a minimum of 300 hours. **Recertification requirements:** Same as National Registry.

Responsible certification agency. The Maryland Institute for Emergency Medical Services Systems (MIEMSS) certifies EMTAs. The Maryland Board of Medical Examiners, through MIEMSS, certifies CRTs, ATTs, and EMTs. This agency has a physician medical director. Each jurisdiction with ALS program is required to have a physician medical advisor.

Reciprocity. Equal training and testing based on national DOT objectives.

Salary ranges. Basic EMT: \$10,000/year to \$15,000/year; Intermediate EMT: \$12,000/year to \$28,000/year. Paramedic: \$24,000/year to \$32,000/year.

Number of permanent state EMS office staff members. 80.

Federal/government funding. DOT Grants and HHS Block grants.

State population. 4,500,000.

Number of licensed ambulance vehicles (public and private) in the state. Approximately 550.

Percent of state population covered by 9-1-1. 100%.

Numbers of EMS personnel. Currently state-certified Basic EMTs, 14,000; currently state-certified EOA M.A.S.T., 9,000; currently state-certified Cardiac Rescue Technicians, 1,400; currently state-certified Aviation Trauma Technicians, 35; currently state-certified Paramedics, 500; current number of emergency physicians, not known; current number of emergency nurses, not known.

Numbers of EMS services. Fire department (paid), 10; private ambulance services, 30; municipal, 5; hospital-based, 0; law enforcement, 2; subscription, 0; contract, 0; funeral home, 0; air ambulance, 2; industrial, 0; military, 3; Civil Defense, 1.



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STATE SURVEY

Statewide uniform ambulance reporting form. Yes, 100% participation. This form is turned in to a central data gathering office.

Description of statewide data gathering system. Monthly reports sent to companies (100% participation). Use optical scanning system to load data from run sheets into computer system.

Important changes and developments within the past year. Bills passed by the 1987 Maryland General Assembly: 1) Comprehensive Trauma Rehabilitation Services Coordinating Council established, composed of 21 members; to develop rehab services program, document needs and establish priorities, develop funding recommendations, and provide for development of a public agenda for coordination of trauma rehabilitation. 2) Maryland Med-Evac Helicopter Advisory Committee will provide ongoing oversight and policy guidelines for deployment of helicopters, staffing, support functions, communications, training, optimal utilization of fleet, budgeting, protocols for cooperative use by Maryland state police helicopters, and examine reciprocity with adjoining states. 3) Task Force to Study the Crisis in Nursing will examine ways to retain working nurses, to attract inactive nurses back into the profession, and to promote nursing in secondary schools. 4) Monies allocated to enhance the EMS system include: the foundation was laid to increase motor vehicle license tag renewal fee to establish a \$31 million fund for Med-Evac and related EMS services (bulk of fund will be used to purchase 10 new MSP helicopters; MIEMSS field operations was funded for 8 new SYSCOM/EMRC operators; \$3 million was allocated for constructing the new Shock Trauma Center; a new position of aeromedical director was established within MIEMSS to provide more intense medical input into the Med-Evac program. 5) Bill that failed to pass: requiring all persons to wear protective headgear when operating or riding on a motorcycle.

MASSACHUSETTS

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Basic EMT. Skills include: Airway management, CPR, bleeding control, splinting, spinal immobilization, oxygen administration, assessment, delivery techniques, transportation and general emergency care. Anti-shock garment use was incorporated into all EMT courses in January 1987. Use of M.A.S.T. by individual ambulance services remains optional. **Hours of training:** Effective 11/85, 110-hour DOT curriculum as minimum. **Certification requirements:** Initial certification—pass course and state-administered written and practical examinations. **Recertification requirements:** Every two years via annual CPR certification, 20-hour refresher course and 48 additional hours of continuing education.

Intermediate EMT. Skills include: Basic EMT skills plus anti-shock trousers, esophageal obturator and/or endotracheal intubation and IV fluid replacement. **Hours of training:** 220. **Certification requirements:** Basic EMT certification, complete an approved I-course which includes: DOT curriculum Mod-

ules I-II, V, XV; clinical practicum: skill requirements; state exam; field internship—80-100 hours; demonstration of competency through evaluation and also minimum skills numbers. **Recertification requirements:** 30 hours refresher; annual CPR; demonstration of continued skill maintenance by annual physician evaluation of skills, and after skill evaluation, 40 additional hours of continuing education every two years.

Paramedic. Skills include: IV, ETT (or EOA), M.A.S.T., cardiac monitoring, defibrillation, drug therapy, pediatric and neonatal care. **Hours of training:** 800-1,500. **Certification requirements:** Basic EMT certification, ACLS and CPR certification, completion of state-approved course which includes full 15 DOT Module curriculum, clinical practicum during which students demonstrate skill performance and rotations in ED, IV, or OB/GYN, PEDS, neonatal and psychology. Field internship minimum 80 hours, also demonstrate skill performance through evaluation and completion of minimum skill numbers. **Recertification requirements:** 48 hours of refresher courses, annual CPR, refresher ACLS, after physician evaluation of skills and ACLS, an additional 37 hours of continuing education every two years.

Responsible certification agency. Office of Emergency Medical Services. State law does not require a medical director for each EMS system; however, each regional EMS Council does have a medical director. Regulations require medical director for all advanced life support and also for M.A.S.T. use by BLS services.

Reciprocity. Out-of-state Basic EMTs must complete written and practical examinations. All Advanced EMTs must complete written and/or practical examinations.

Salary ranges. Basic EMT: \$12,000/year to \$21,000/year; Intermediate EMT: \$14,000/year to \$23,000/year. Paramedic: \$20,000/year to \$28,000/year.

Number of permanent state EMS office staff members. 22.

Federal/government funding. Preventive Health and Health Services Block Grant.

State funds allocated to run state EMS offices. \$650,000 for state and regional offices.

State population. 5,727,491.

Number of licensed ambulance vehicles (public and private) in the state. Approximately 500.

Percent of state population covered by 9-1-1. 38%.

Numbers of EMS personnel. Currently state-certified Basic EMTs, 11,312; currently state-certified Intermediate EMTs, 304; currently state-certified Paramedics, 367; current number of emergency physicians, not known; current number of emergency nurses, not known.

Numbers of EMS services. There are 414 ambulance services, 231 at the Basic level, 73 Intermediate, 108 Paramedic and 8 Paramedic hospital-based units.

Statewide uniform ambulance reporting form. None; however, some regions do.

Important changes and developments within the past year. 1. Increased number of communities covered by Paramedic level service. Hospital-based Paramedic units (non-transport) providing second-tier ALS to multiple communities now service a significant

portion of the state. 2. State is experiencing shortages of EMT-Basics and Paramedics. The supply and demand has moved salaries higher than the previous year.

MICHIGAN

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Basic EMT. Skills include: Those defined in the DOT training criteria. **Hours of training:** Approximately 120. **Certification requirements:** Passage of both state written and practical examination. **Recertification requirements:** Every three years. Ongoing education credits required.

Intermediate EMT. Skills include: Those skills in the first five Modules of the DOT advanced training criteria. **Hours of training:** 85. **Certification requirements:** Passage of state written and practical examinations. **Recertification requirements:** Every three years. Ongoing education credits required.

Paramedic. Skills include: Those defined in the DOT 15-Module training criteria. **Hours of training:** 600. **Certification requirements:** Passage of state written and practical examinations. **Recertification requirements:** Every three years. Ongoing education credits required.

Responsible certification agency. Department of Public Health. No physician involvement at EMT (Basic) level. Physician involvement required at Intermediate level. All physician involvement at Paramedic level. Medical directors are required for all advanced life support systems.

Reciprocity. Michigan will accept training from other states which meets DOT minimum criteria; however, all candidates from out of state must pass Michigan's examinations for licensure.

Salary ranges. Basic EMT: \$12,500/year to \$16,000/year; Intermediate EMT: \$13,000/year to \$17,000/year. Paramedic: \$15,000/year to \$25,000/year.

Number of permanent state EMS office staff members. 9.

Federal/government funding. U.S. DOT and Preventive Block Grant Funds.

Unique methods of funding. Millage (taxation) locally, county by county. **State population.** Approximately 9,000,000.

Number of licensed ambulance vehicles (public and private) in the state. 1,021.

Percent of state population covered by 9-1-1. Approximately 21%.

Numbers of EMS personnel. Currently state-certified Basic EMTs, 15,000; currently state-certified Intermediate EMTs, 2,000; currently state-certified Paramedics, 1,600; current number of emergency physicians, not known; current number of emergency nurses, not known.

Numbers of EMS services. Fire department (paid), 126; volunteer squads, 25; private ambulance services, 191; hospital-based, 18; law enforcement, 6; funeral home, 12; air ambulance, 21.

Statewide uniform ambulance reporting form. None.

MINNESOTA

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Minneapolis, MN 55440
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Basic EMT. Skills include: Introduction to emergency care training anatomy and physiology; vital signs, airway obstruction, respiratory arrest, cardiac arrest, mechanical aids to breathing and resuscitation, bleeding, shock, pulmonary and CPR, dressing and bandaging of wounds, principles of musculoskeletal care and fractures of the upper extremity, pelvis, hip, and lower extremity, injuries to the head, face, neck, spine, eye, chest, abdomen and genitalia; medical emergencies including poisoning, bites, stings, heart attack, stroke, dyspnea, diabetes, acute abdominal problems, communicable diseases, abnormal behavior, alcohol and drug abuse, epilepsy; pediatric emergencies and practice in patient assessment and emergency childbirth, environmental emergencies, techniques of lifting and moving patients and care of suspected spine injuries; extrication and rescue of patients, ambulance operations and communications. We use DOT curriculum for levels of EMT training and the NREMT exams for EMT, EMT-I and EMT-Paramedic. **Hours of training:** At least 110 hours of instruction with a minimum of 91 hours classroom, 10 hours clinical (5 must be in-hospital). **Certification requirements:** State-approved courses based on DOT standards. NREMT exam following initial EMT course and test approved by health commissioner to recertify every two years.

Intermediate EMT. Skills include: Instruction in the role and the legal and medical responsibilities of intermediate EMTs; classroom and practical skills instruction in human physiological systems, shock and fluid therapy, including the use of medical anti-shock trousers, patient assessment, respiratory systems and use of the esophageal obturator airway. **Hours of training:** At least 52 hours including both classroom instruction and practical skills. **Certification requirements:** State-approved courses based on DOT standards. Must be currently certified as EMT-Basic. NREMT-I exam. **Recertification requirements:** Every two years.

Paramedic. Skills include: The role and the legal and medical responsibilities of paramedics, human systems and patient assessment; shock and fluid therapy, general pharmacology, respiratory system, cardiovascular system, central nervous system. Care of soft tissue injuries, the musculoskeletal system, medical emergencies, obstetric and gynecological emergencies, pediatric and neonatal medical care, emergency care of the emotionally disturbed patient, rescue techniques and telemetry and communications. **Hours of training:** Includes DOT/NREMT-P standards. **Certification requirements:** State-approved courses based on DOT standards. NREMT-P exam required. **Recertification requirements:** Every two years.

Responsible certification agency. State conducts all exams. Certification group does include physicians. All basic life support ambulance services are required to have a medical advisor. All ad-