



**Medical Control Board
Office of the Medical Director**

**Annual Report from the Medical Director
Operational & Fiscal Year July 2009 - June 2010**

Report Structure

Beginning with this year's Medical Control Board/Office of the Medical Director (MCB/OMD) Annual Report, based upon feedback from key government and EMS system leaders in metropolitan Oklahoma City and Tulsa, the content is restructured for efficient and purposeful review of key activities accomplished by MCB physicians, the Medical Director, and OMD professionals.

Medical Oversight Design

The **Medical Control Board** is established by the Emergency Physician Foundations of Oklahoma City (Western Division) and Tulsa (Eastern Division). The Medical Control Board is increased from nine to eleven physicians devoting volunteer service to the patients served by the EMS system for metropolitan Oklahoma City and Tulsa and to the dedicated men and women rendering emergency medical care as an Emergency Medical Dispatcher, Emergency Medical Technician (EMT)-Basic, EMT-Intermediate, or EMT-Paramedic. By design, emergency physicians constitute all positions on the MCB with the exception of one position designated to be filled by another physician medical specialist. The emergency physicians most typically represent the busiest emergency departments in the areas served by the EMS system. The following physicians served on the MCB during this operational and fiscal year:

Jeffrey D. Dixon, MD, FACEP – Chair – Hillcrest Medical Center (Tulsa)
Jeffrey Reames, MD, FACEP – Vice-Chair – Mercy Health Center (Oklahoma City)
Charles "Bo" A. Farmer, MD, FACEP – Secretary – St. John Medical Center (Tulsa)
Brent Barnes, MD, FACEP – University of Oklahoma Medical Center (Oklahoma City)
Paul Beck, MD, FACEP – St. Francis Hospital (Tulsa)
Mark Blubaugh, DO, FACOEP – Oklahoma State University Medical Center (Tulsa)
Jerry Brindley, MD, FACEP – Deaconess Hospital (Oklahoma City)
Charles F. Engles, MD, FACS – Neurosurgeon
Kurt Feighner, D.O., FACOEP – Edmond Medical Center
John C. Nalagan, MD, FACEP – Integris Baptist Medical Center (Oklahoma City)
Thelma Peery, DO, FACOEP – Southcrest Hospital (Tulsa)

The MCB meets bimonthly to review a report from the President of the Emergency Medical Services Authority, a report from the Medical Director, standard of medical care advancements and/or revisions endorsed by the Medical Director, financial statements of the MCB/OMD, and new business brought before the MCB by any interested party.

The **Medical Director** is the day-to-day recognized clinical authority in the EMS system, serving as such between times the MCB is meeting. *Jeffrey M. Goodloe, MD, NREMT-P, FACEP* is the Medical Director for all agencies receiving medical oversight from the MCB/OMD.

Beginning July 1, 2009, the MCB contracted with the Department of Emergency Medicine at the University of Oklahoma's School of Community Medicine for physician medical director services. Prior to this time, the MCB employed a physician under a City of Tulsa benefits

program and employment contract. Substantial benefits to the EMS system and its patients are achieved through this new arrangement, bringing research and educational capabilities from the University of Oklahoma, its new emergency medicine residency program, and its collegial network of medical professionals.

This year is Dr. Goodloe's inaugural year as Medical Director for the MCB/OMD and for familiarization purposes, his biography follows:

Dr. Goodloe began his multifaceted EMS career in Waco, Texas in 1988. He worked as an EMT-Basic, as an EMT-Intermediate, and as an EMT-Paramedic for Baylor University EMS and American Medical Transport, the 911 system ambulance service for Waco and the surrounding cities within McLennan County, Texas, throughout his years of undergraduate studies at Baylor University.

Graduating cum laude with a Bachelor of Science in Biology, he was accepted in 1991 for medical studies at The University of Texas Medical School at San Antonio. He was conferred the Doctor of Medicine degree in 1995. Throughout his medical school years, Dr. Goodloe continued to work as a paramedic in the San Antonio metropolitan area as well as in Pasadena, Texas. During his last two years of medical school, he was appointed an instructor of EMS personnel (civilian and military), nurses, fellow medical students, and physicians at The University of Texas Health Science Center in San Antonio as well as its counterpart medical institution in Houston.

He completed the residency in emergency medicine at Methodist Hospital of Indiana in affiliation with the Indiana University School of Medicine in 1998. During residency training, Dr. Goodloe worked as a helicopter physician at Methodist Hospital's LifeLine and as a motorsports physician at the famed Indianapolis Motor Speedway. Additionally, Dr. Goodloe served as the Associate EMS Medical Director for Hendricks County EMS, a consortium of fire-based EMS services.

Upon residency graduation, he helped create the EMS fellowship training program at The University of Texas Southwestern Medical Center at Dallas, serving as its inaugural fellow and as an attending faculty physician in Parkland Memorial Hospital's Emergency Department.

Prior to being recruited to the University of Oklahoma School of Community Medicine Department of Emergency Medicine in August of 2007, Dr. Goodloe served 8 years as the EMS Medical Director for the Plano, Texas Fire Department, an EMS organization providing both first response and ambulance transport.

He is an Associate Professor and Director of the EMS Division in the Department of Emergency Medicine at The University of Oklahoma School of Community Medicine. He became board-certified by the American Board of Emergency Medicine (ABEM) in 1999 and successfully recertified his status as an ABEM Diplomate in 2009. Dr. Goodloe is recognized as a Fellow of the American College of Emergency Physicians and serves in multiple leadership roles within the College. He maintains an active clinical and academic practice of emergency medicine at St.

John Medical Center in Tulsa, having performed the same at St. Francis Hospital in Tulsa from August 2007 – August 2009.

He has continuously maintained state and/or national certification as a paramedic since 1990. Dr. Goodloe is a frequently requested lecturer in EMS continuing medical education, being invited to present advances in the practice of EMS medicine at state, regional, national, and international medical conferences. He has particular knowledge in designing in-house EMS educational programs. Dr. Goodloe is the only physician in the United States currently credentialed as an on-site reviewer for the Commission on Accreditation of Ambulance Services and as an organization and course reviewer for the Continuing Education Coordinating Board for Emergency Medical Services. These organizations promulgate "gold standard" accreditation criteria for EMS agencies and EMS continuing education, respectively.

He has additional interest and experience in tactical emergency medicine oversight and support. Dr. Goodloe served as the Medical Director for the Plano, Texas Police Department's Emergency Response Team (Special Weapons and Tactics) from 2001-2007, formalizing a tactical paramedic support program including continuous paramedic coverage to accompany tactical officers on missions, creating focused medical education curricula for tactical paramedics, and advocating for regional tactical medical standards exceeding those of national organizations.

Dr. Goodloe's EMS clinical interests include cardiac arrest management, airway management with pharmacologically-assisted invasive airways, non-invasive airway management with Continuous Positive Airway Pressure (CPAP), invasive airway confirmation practices with continuous waveform capnography, optimizing timeliness of care for acute coronary syndromes and multisystems trauma, and post-exposure prophylaxis for EMS personnel.

All of the above honors and privileges considered, Dr. Goodloe is simply grateful to be of service to persons assisted by emergency medical services, to be affiliated with such a remarkable cadre of EMS professionals, emergency nurses, and emergency physicians, and to be a husband to his wife of 11 years, Mary. His beloved dogs, Leo the retired racing greyhound and Cady the german shepherd, help to keep life in perspective, being happy he remains gainfully employed to keep food in the dog dishes.

The **Office of the Medical Director** is comprised of the following professionals:

Jeffrey M. Goodloe, MD, NREMT-P, FACEP – Medical Director

T.J. Reginald, NREMT-P – Director of Research & Clinical Standards Development

David S. Howerton, NREMT-P – Director of Clinical Affairs Western Division (Oklahoma City)

Jim O. Winham, RN, BSN, NREMT-P – Director of Clinical Affairs Eastern Division (Tulsa)

Alicyn Smith – Administrative Assistant (July 2009 – December 2009)

Tammy Appleby – Executive Assistant to the Medical Director (January 2010 -)

OMD professionals work daily to assist public safety agencies charged with emergency medical services responsibilities to fulfill those according to the clinical care standards established by the MCB. Medical outcomes determinations, individual medical care review, personnel education,

personnel credentialing, equipment/vehicle performance review and inspection are just some of the myriad activities performed in support of excellence in pre-hospital emergency medical care.

The Director of Clinical Affairs Eastern Division position was funded this year for the first time in several years. Restoration of this position provides essential service to all agencies served by OMD. All OMD directors are particularly experienced and gifted clinicians and administrative leaders, guided by admirable work ethic. Each has served this and other EMS systems in a multitude of responsibilities, beginning with field service and progressing to their current oversight duties. Ms. Appleby, retired from the United States Air Force as an E6, began work in the newly crafted role of Executive Assistant to the Medical Director, responsible for OMD workflow logistics, organization, and spearheading additional service product lines.

Philosophy of Medical Oversight

The provision of emergency medical services is more than public safety in metropolitan Oklahoma City and Tulsa; it is a practice of medicine delegated by the MCB's Medical Director to the nearly 3,200 non-physician EMS professionals serving the over 1.5 million residents, workers, and visitors of the affiliated cities.

Just as an individual has right to access an educated, qualified, and credential physician providing progressive medical care in times of illness or injury, it is incumbent the EMS system serving metropolitan Oklahoma City and Tulsa provide educated, qualified, and credentialed EMS professionals authorized to deliver the finest pre-hospital medical care available. When an individual in this service area experience sudden, unexpected medical symptoms from relatively benign, though concerning pain to cardiopulmonary arrest, he or she can rest assured individuals answering the call for help will be trained and prepared to address the medical situation at hand. This cannot happen without up-to-date, progressive medical treatment protocols and accompanying education and training.

Beginning July 1, 2009, the MCB/OMD committed to bringing its medical treatment protocols to new standards, unparalleled amongst large, urban EMS systems in the United States. Significant numbers of protocols were added, updated, and/or reformatted consistently at every MCB meeting this year. In other words, every two months throughout the year additional clinical capabilities and care are being provided to the patients needing them most. This commitment to excellence in pre-hospital emergency care reflects the drive and energy of the MCB, Medical Director, OMD, leaders in affiliated fire departments and EMSA, and all field EMS professionals.

Key Advances in Medical Treatment Protocols

Interhospital Transfer – specification for EMS professionals to directly contact the Medical Director 24/7 for issues of interhospital clinical concern unable to be resolved between referring and receiving physicians.

Stroke – utilization of the Los Angeles Prehospital Stroke Scale assessment model to more accurately identify acute stroke patients.

Patient Prioritization & Destination Determination – utilization of the Centers for Disease Control and Prevention Trauma Field Triage Decision Scheme to better prioritize trauma patients based upon evidence-based outcomes, rather than mechanism of injury models proven to be less accurate.

Cardiac Arrest – multiple specific cardiac dysrhythmia protocols (*Asystole, Pulseless Electrical Activity, Ventricular Fibrillation/Pulseless Ventricular Tachycardia, Cardiac Arrest and Cardiac Arrest Etiologies*) developed and/or reformatted to highlight the importance of chest compressions, avoidance of hyperventilation, efficient defibrillation, evaluation and treatment of underlying cause(s), and elimination of endotracheal medication administration.

Calcium Chloride – addition of needed pharmaceutical to treat high potassium effects, including cardiac arrest, and to treat calcium channel blocker toxicity.

Acute Coronary Syndromes (includes Heart Attacks) – empowering EMT-Basics to acquire and transmit 12-lead electrocardiograms, which creates efficiencies in scene care and earlier activation of emergency physicians and cardiologists at receiving hospitals. Additional capabilities were created to allow EMT-Basics to administer aspirin to patients.

Therapeutic Hypothermia – introducing cooling therapy for post-cardiac arrest patients to promote better neurologic recovery. The EMS system announced in August 2009 that only hospitals providing continuing cooling therapy would be eligible to receive cardiac arrest patients/post-cardiac arrest patients beginning in January 2010. In August 2009, three hospitals in Oklahoma City and one hospital in Tulsa provided this therapy. By January 5, 2010 there were eight hospitals in Oklahoma City and five hospitals in Tulsa capable of therapeutic hypothermia. This increase in local hospital clinical capability, available to all patients whether served directly by this EMS system or not, is directly attributable to MCB/OMD championing this needed care for Oklahomans. The EMS System for Metropolitan Oklahoma City and Tulsa became an early adopter of this evidence-based medical therapy amongst its counterpart cities in the United States. Dr. Goodloe and Mr. Reginald authored a report in *Journal of Emergency Medical Services*, the most widely circulated EMS publication among EMTs and paramedics in the world, detailing the achievement and providing encouragement to other systems to follow suit. Multiple inquiries were received around the country for additional information following the February 2010 publication.

Furosemide – removal of pharmaceutical shown in evidence-based literature to be problematic in the pre-hospital environment. Acute shortness of breath can prove very difficult to accurately diagnose within limited capabilities of EMS medicine (lack of comprehensive blood lab analytics, lack of chest x-ray). Administration of furosemide with good intention, but in inappropriate patients, can lead to dehydration and blood chemistry abnormalities. While furosemide has been in the formulary of most EMS systems for years, advanced thought EMS medical oversight physicians have begun removing or substantially restricting use of furosemide in EMS.

Left Ventricular Assist Device (LVAD) – introducing therapeutic intervention instructions for patients with a device surgically placed to compensate for a failing heart muscle. Integris Baptist

Medical Center in Oklahoma City has established one of the highest volume LVAD implantation centers in the United States. This protocol was developed in partnership with subspecialists and their nursing clinicians to support increasing numbers of LVAD patients in the serviced areas. Specific areas of instruction include operation and correction of power supply issues, cardiac arrest treatments, and destination determination instructions.

Cardiovascular Emergencies – multiple protocols related to heart rate disorders and hypertension (*Bradycardia, Stable Tachycardia, Unstable Tachycardia, Hypertensive Emergencies*) updated in formatting and care instructions to provide clearer treatment plans for EMTs and paramedics. Changes in pharmaceutical usage made for more effective interventions in heart rate control and hypertension emergencies. Additional safety parameters highlighted for use of electrical shock therapy for tachycardias.

Altered Mental Status – change in use of dextrose (sugar containing pharmaceutical) to avoid hyperglycemia whenever possible, particularly in stroke patients. Hyperglycemia in acute stroke has been correlated to worse outcomes. Additional change included promoting use of intra-nasal naloxone to intervene in narcotic-induced coma. At times, intravascular access can prove challenging and may have deleterious effect if the antidote to narcotic overdose cannot be administered in a timely manner.

King Airway – introduction of new advanced airway device to replace a prior generation device (Combitube). This newer airway is easier to place, less complex in design, and will allow use without waveform capnography when necessary. For fiscal responsibility, agencies stocking the Combitube were informed they would have at minimum 12 months allowance to continue to utilize their Combitubes prior to switching to the King Airways should they desire to minimize budgetary impact.

“First Responder Protocol Book” – the entirety of this treatment instruction set was withdrawn from use. The philosophy of a “single system comprised of multiple agencies jointly serving patients” has been significantly advanced since July 1, 2009. Maintenance of a separate protocol set apart from those designated for EMSA was confusing, contradictory, and an impediment to the philosophy promoting better integrated treatment plans amongst all affiliated agencies. The First Responder Protocol Book, last updated in 2002, was rescinded effective April 1, 2010. All EMS personnel in the EMS System for Metropolitan Oklahoma City and Tulsa, including Emergency Medical Dispatchers, all field personnel, and clinical administrative leaders now operate literally “on the same pages” of clinical care instructions.

Emergency Transfer Requests (Emergency Medical Dispatch) – introduction of a new call processing priority system specifically for interfacility transfers (hospital emergency department to hospital emergency department, surgery, or intensive care unit) to promote faster response times for time-sensitive emergencies (heart attacks, strokes, other vascular emergencies, significant trauma requiring surgical intervention).

Behavioral Disorders – introduction of safer guidelines for physical restraint of patients as well as utilization of chemical restraint guidelines to include utilization of the antipsychotic agent haloperidol. Greater recognition of the risk of sudden death by individuals in excited delirium

has helped to formulate treatment plans such as the one endorsed by the MCB/OMD to act decisively in these challenging situations to not only prevent further injury to the patient and minimize risk of injury to EMS and law enforcement professionals, but to specifically reduce the risk of sudden death of the patient.

Abdominal Pain/Nausea/Vomiting – consolidation into one protocol for ease of use by field EMS professionals. Replacement of diphenhydramine, a first generation antihistamine with some anti-nausea properties but with side effects of sedation, with ondansetron, was specified. Ondansetron (trade name Zofran) has much better nausea control without sedative properties. This medication can be given in intravenous as well as dissolving tablet form. Better control of nausea and vomiting has been achieved.

Pain Management – removal of meperidine (trade name Demerol) and introduction of fentanyl for pain control. Meperidine has been removed from nearly all hospital formularies due to toxicity issues with side effects including seizures. Excessive sedation and prolonged action effects can result from meperidine administration. Fentanyl is an ideal EMS analgesic agent. It has rapid onset of action, duration of action is approximately 1 hour, and creates less side effects, such as nausea and vomiting, than morphine or meperidine. Morphine remains in the EMS formulary for use in patients with fentanyl allergy or for pain control in the acute coronary syndrome setting.

Parenteral Drug Administration – “parenteral” refers to routes of medication administration other than by mouth. Several outdated drug administration routes were rescinded in this upgrade and included cessation of using sublingual injections, subcutaneous injections, and rectal administrations.

Cardiopulmonary Resuscitation Termination – update to follow evidence-based practices in the termination of resuscitation in the field. Dr. Goodloe is recognized as a thought leader in this aspect of EMS medicine and has been invited to speak at local, state, and regional EMS conferences on this topic. The protocol was updated to specify futility of further resuscitation at 20 minutes of active intervention, with introduction of the requirement that paramedics consult on-line medical control physicians for concurrence with termination request. OMD personnel, including all Directors and the Medical Director, took all system consults for resuscitation termination 24/7 for the first 30 days of this protocol change to promote better education and understanding amongst on-line medical control physicians.

Traumatic Injury – multiple protocols (*Chest/Abdomen/Pelvis Injury, Extremity/Amputation Injury, Eye Injury, Brain/Spine Injury, Water Submersion Events, and Tourniquet Application*) were reformatted and updated to promote better injury care. Introduction of tourniquets was accomplished for use by all EMS personnel in the setting of serious extremity hemorrhage. Tourniquets are carried on all front-line fire engines, squads, and ladders and EMSA ambulances.

Key Advances in MCB/OMD Administrative & Clinical Policies

Historically, most administrative actions of the MCB/OMD have been “management by memo” in structure. Over time as the EMS system has grown in size and structure, these memos have proven difficult to track, confusing in intent, dated in instruction, and while unintentional, contradictory in direction. In efforts to be more transparent in operation, clearer in administrative and clinically-related expectations, and to better support field professionals, the Medical Director has specified creation of a MCB/OMD Policy and Procedural Manual to accompany the Medical Treatment Protocols. Like the treatment protocols, this will prove a multi-year project due to scope and nature of always advancing the practice of EMS medicine and its oversight.

Patient Care Report Completion Policy – This policy specifies that patient care medical records are to be completed prior to the EMS professional leaving the duty shift during which the patient was rendered care. Lack of timely medical report completion hinders patient care inquiries from destination hospital nurses and physicians, contributes to inaccuracies related to increased time intervals between care events and their documentation, and hinders timely medical care quality review conducted by agency CQI leaders, OMD Directors, or the Medical Director. This policy was adopted by the MCB and received full support from affiliated agencies.

Hospital Response Policy – This policy specifies actions to be taken when persons requesting EMS system service are already within a destination receiving hospital. Situations have arisen where emergency department patients tire of waiting to see a physician and attempt to activate 911 for ambulance response to either be taken into the emergency department itself or to another hospital. These attempts pose serious potential violations of federal law involving hospital obligations to patients presenting for care at the hospital as well as tying up EMS response personnel and apparatus that could be more appropriately utilized. Careful and deliberate action is specified to ensure appropriate hospital personnel are alerted to respond to the patient’s reported location to promote timely assessment of the patient current condition.

MCB/OMD Review of System Performance Parameters

Response Times – EMSA calculates and supplies MCB/OMD with monthly performance reports regarding response times by Paramedics Plus, the current contractor for clinical and clinically-related administrative services. All monthly reports supplied to MCB/OMD by EMSA were personally reviewed by the OMD Directors, the Medical Director, and the MCB. All reports indicate aggregate compliance with contracted response time standards. Fire departments, particularly the larger departments, such as Oklahoma City, Tulsa, and Edmond supply their response times for EMS-related calls on a monthly basis as well. These reports are personally reviewed by the OMD Directors and the Medical Director on a monthly basis. All reports indicate reasonable response time performances.

Hospital-Initiated EMS Diversion Requests – Paramedics Plus calculates and supplies MCB/OMD monthly reports on the number of hospital-initiated EMS diversions their personnel encountered in ambulance transports. All monthly reports supplied to MCB/OMD by Paramedics Plus were personally reviewed by the OMD Directors, the Medical Director, and the

MCB. All reports indicate reasonably desirable control of diversion numbers by hospitals in the service area. In May of 2008, the MCB took action to reduce then-elevating numbers of hospital-initiated EMS diversion requests by instituting a protocol that allows paramedics to override such requests if the patient was clinically stable and had a pre-existing relationship with that hospital, its network, and/or a physician on its active or referring medical staff. The effects of that protocol continue to show positive impact as the EMS system promotes patients receiving continuity of care for better clinical outcomes and fiscal stewardship.

Trauma Priority & Destination Reports – Paramedics Plus calculates and supplies MCB/OMD monthly reports detailing the numbers and percentages of trauma patients by priorities (One, Two, or Three) and destinations. All monthly reports supplied to the MCB/OMD by Paramedics Plus were personally reviewed by the OMD Directors, the Medical Director, and the MCB. All reports indicate continuance of the following: 1) Priority One Trauma patients comprise <15% of traumas on a monthly basis, with most months seeing <10%. 2) Documentation supporting patients identified as Priority One Trauma is typically at or above 90%. 3) Destination for Priority One Trauma patients is appropriately selected at or above 98% of the time. Deviations from appropriate destination selection are reviewed with individual paramedics making those deviations.

Clinical Continuous Quality Improvement Agency Reports – Paramedics Plus and fire department EMS liaisons calculate and supply MCB/OMD monthly reports detailing the activities related to EMS in the respective agency. All agencies with EMT-Intermediates and EMT-Paramedics regularly adhere to the requirements to supply these reports. Content is comprised of call types and volumes, airway management performance, cardiac arrest management performance, intravenous access performance, pharmaceutical utilization, and educational initiatives. All monthly reports supplied to the MCB/OMD by these agencies with advanced life support capabilities were personally reviewed by the OMD Directors and the Medical Director. These reports consistently reflect that agency personnel are meeting or exceeding the clinical expectations of MCB/OMD. Summary statements of these reports are either reported to the MCB by Dr. Goodloe and/or the full agency reports are available for review to any MCB physician at their request. Smaller, basic life support fire departments are varied in their reporting consistencies. OMD Directors and the Medical Director continue to work with these departments to facilitate timely and consistent reporting of their activities.

Cardiac Arrest Outcomes – The EMS System for Metropolitan Oklahoma City and Tulsa continues to achieve enviable outcomes in cardiac arrest. Whereas the national average for survival from out-of-hospital cardiac arrest (witnessed arrest, bystander CPR, and shockable cardiac dysrhythmia upon EMS arrival) remains at 6.4%, outcomes in Oklahoma City (29% for calendar year 2009) and Tulsa (46% for calendar year 2009) are several times this national aggregate performance. Importantly, survivors of cardiac arrest in our area are most frequently able to return to their previous quality of life, neurologically intact and enjoying family and work endeavors.

Response Vehicle Inspections – OMD Directors continue to inspect new emergency medical response vehicles, such as fire engines and ambulances, to ensure correct medical equipment

provisioning and condition. Few deficiencies are typically discovered and immediately corrected when found.

MCB/OMD Project Initiatives

Field Presence of the Medical Director – Perhaps the biggest change in medical oversight by the Medical Director is Dr. Goodloe’s presence in the field, responding to medical calls alongside fire-based and EMSA-based EMS professionals. While the myriad of Medical Director responsibilities prevents a full-time equivalent presence in the field, Dr. Goodloe has prioritized spending quality time with the EMSA Field Operations Supervisors, Oklahoma City Fire Department EMS Officers, and Tulsa Fire Department EMS Officers to make crew and station visits in between making emergency responses. The results have fostered closer EMS professional – Medical Director working relationships and established Dr. Goodloe’s agency neutrality in providing medical oversight. A career EMS professional, beginning with EMT-Basic service and encompassing nearly all roles towards the Medical Director responsibility, Dr. Goodloe believes in leading by example and leading from the front. Field presence has promoted numerous conversations with field professionals comfortable in asking about MCB/OMD standards of care and suggesting ways to further advance these standards.

Protocol & Policy Distribution – To promote timely and consistent distribution of protocol updates, Mrs. Appleby, Executive Assistant to the Medical Director, has developed a materials flow practice to ensure all affiliated agencies receive all relevant standards of clinical care updates, in protocol or policy format, no later than the first business day of the month that follows the MCB meeting. Affiliated agencies then have two full months to conduct organized educational review with their EMS professionals on the material to ensure all professionals responsible for EMS clinical care have been trained prior to the effective date of new protocols and/or policies.

Continuous Waveform Capnography and Patient Safety - An area of particular clinical care emphasis under Dr. Goodloe’s direction, with endorsement of MCB, is uniform and timely initiation of continuous waveform capnography post endotracheal intubation to ensure correct airway placement. The evidence-based medical literature supports elimination of unrecognized esophageal intubations with this technology. The availability of continuous waveform capnography has been in place in the EMS System for Metropolitan Oklahoma City and Tulsa for the past few years, though compliance with its use has proven non-uniform. Beginning in July 2009, strict adherence to uniform and timely initiation of continuous waveform capnography post endotracheal intubation was enforced. Dr. Goodloe is a recognized thought leader on this aspect of EMS medicine and has been invited to speak at local, state, regional, and national EMS conferences on this topic. The incidence of unrecognized esophageal intubations with protocol compliance since July 1, 2009 has been 0%.

Coordinated Continuing Education – Prior to July 2009, OMD did not have consistent interaction and oversight of continuing education in the EMS system. The results, without a hub of coordination, have proven that agencies are pursuing disparate educational initiatives, resulting in educational message inconsistencies. While challenging to correct in short order, OMD began meeting with educational leaders in affiliated agencies willing to attend new

educational forum meetings on a monthly basis. All affiliated agencies have been encouraged to send their EMS educational leaders to this forum. Work has progressed and educational materials are beginning to be created for multi-agency use. The results will promote consistency in educational messaging and consistency in timing of education material distribution throughout the EMS system, thereby promoting better integration of treatment plans between fire-based and EMSA-based EMS professionals.

EMS Professional Credentialing Testing – OMD Directors, with oversight by the Medical Director, continued the practice of verification of clinical skills performance and knowledge base testing of all professionals on a biannual basis.

EMS System Promotion – Metropolitan Oklahoma City and Tulsa is blessed with the multitude of dedicated EMS professionals in its EMS system. Dr. Goodloe, with endorsement by the MCB, has initiated a purposeful plan to better recognize the achievements of these EMS professionals. Academic writing, system-based research with outcomes presentations at scientific assemblies, and acceptance of EMS conference speaking invitations are routinely conducted to promote this fine EMS system. EMS Today is the nation's premier EMS conference. In March 2010, OMD Directors David Howerton and Jim Winham accompanied Dr. Goodloe to present at this conference. All OMD personnel developed presentations to make at the 2010 Oklahoma EMT Association's Medic Update. Results are already evident in a much wider recognition within the EMS profession of the system's achievements and progressive programs as well as increasing numbers of EMTs and paramedics from outside Oklahoma indicating interest in employment within an affiliated fire department or EMSA. The cumulative results advance the interests of patients, EMS professionals, and the cities within the service area.

Response Configurations – When a caller dials 911 with a medical complaint in metropolitan Oklahoma City or Tulsa, that complaint is able to be coded into one of approximately 1,000 condition acuity determinants established within the Medical Priority Dispatch System (MPDS), a proprietary medical dispatch software system. MPDS is the most widely utilized such system in developed countries around the world and is supported by evidenced-based medicine. Version 12 of MPDS has been adopted by the MCB in specifying clinically appropriate utilization of fire response resources, while attempting to keep as many resources available in service for highest acuity medical responses and non-medical roles (fire suppression, hazardous materials, specialized rescue, and training). The design is to promote the usually closest fire apparatus is available for response to the scene of particularly serious, time-sensitive medical emergencies, such as cardiac arrest, unconsciousness, or gunshot wounds to the chest or abdomen. The criteria utilized to determine whether fire response was selected and agreed to by the affiliated fire departments. All specific call type determinant codes were individually reviewed by the OMD Director of Research and Clinical Standards Development to evaluate for 5% or greater transport to hospital necessitating lights and sirens by paramedic judgment. If so, the determinant code was identified as requiring fire department response. This criterion is weighted toward patient safety, as the MPDS trigger for fire department response is at 10% or greater need for lights and sirens by historical database review of other systems using MPDS. An additional query was conducted to review if any cardiac arrests were discovered for a unique MPDS determinant code and if present, that code was also generally identified as requiring fire department response.

Many, though not all, fire departments receiving medical oversight from MCB/OMD have adopted these specifications into their response policies. OMD Directors and the Medical Director continue to work with fire departments awaiting further city-enabled dispatch abilities before adopting the clinical specifications from the MCB.

MCB Meeting Infrastructure – MCB meetings, historically held in Stroud as a half-way point between the metropolitan areas, were reconfigured to meet via the videoboard system contained at the EMSA Administrative buildings in Oklahoma City and Tulsa. This change has promoted better attendance by interested parties in affiliated agencies. Additionally, all materials for action by the MCB physicians are supplied to them electronically by close of business a minimum of four days prior to the MCB meeting to promote careful consideration of materials involved in clinical and clinically-related administrative decisions of the MCB.

Directions for Operational & Fiscal Year 2010-2011

The upcoming year will be filled with continuation of the multitude of projects identified in this report as well as additional advancements and revisions to clinical standards of care. Based upon the success of medical oversight field presence this year and with comparison to numerous large, urban EMS systems in which medical oversight response vehicles are utilized, MCB/OMD has worked to introduce the OMD Emergency Response Vehicle Program in the Fall of 2010. Careful financial stewardship to minimize system costs for this program has formed its foundation and the program is supported by key EMSA and Fire Department leaders. Details and early results of the program will be reported in the coming year's Annual Report from the Medical Director.

In sum, this past operational and fiscal year has seen tremendous energies and enthusiasms evident from MCB/OMD. Similar commitments and enthusiasms have been mirrored by many of the EMS leaders and liaisons in affiliated agencies. Better working relationships between affiliated agencies and MCB/OMD have resulted in the two achievements that matter most:

- 1 – High quality EMS clinical care for the spectrum of acute illness and injury patients.
- 2 – Determined, agency-neutral support for the EMS professionals providing high quality EMS clinical care.