
# Medical Control Board
# Office of the Medical Director

# Annual Report from the Medical Director
# Operational & Fiscal Year July 2020 - June 2021

## Report Structure

Continuing 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 structured for efficient and purposeful review of key activities accomplished by MCB physicians, the Chief Medical Officers, 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 comprised of 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), EMT-Intermediate, Advanced EMT, or Paramedic. By design, emergency physicians constitute all positions on the MCB with exception of one position designated 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:

*Chad Borin, DO, FACOEP* – St. Anthony Hospital (Oklahoma City)
Chair
*Russell Anderson, DO*– Hillcrest Hospital South (Tulsa)
Vice Chair
*David Smith, MD* – Integris Baptist Medical Center (Oklahoma City)
Secretary
*Roxie M. Albrecht, MD, FACS, FCCM* – Trauma Surgery/Surgery Critical Care (Oklahoma City)
*Barrett T. Bradt, MD* – Saint Francis Hospital (Tulsa)
*Jeffrey D. Dixon, MD, FACEP* – Hillcrest Medical Center (Tulsa)
*David Gearhart, DO, FACOEP* – Oklahoma State University Medical Center (Tulsa)
*Karyn Koller, MD* - University of Oklahoma Medical Center (Oklahoma City)
*John Nalagan, MD, FACEP* – Mercy Hospital (Oklahoma City)
*Keri Smith, DO* – Integris Southwest Medical Center (Oklahoma City)
*Michael Smith, MD, FACEP* – St. John Medical Center (Tulsa)

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

The Chief **Medical Officer** 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, NRP, FACEP, FAEMS, LSSBB* is the Chief Medical Officer 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. Substantial benefits to the EMS system and its patients are achieved through this arrangement, bringing research and educational capabilities from the University of Oklahoma, its emergency medicine residency program, and its collegial network of medical professionals.

This year is Dr. Goodloe's twelfth year as the Chief Medical Officer (formerly titled Medical Director) for the MCB/OMD. For familiarization purposes, his biography can be found at the MCB/OMD website, okctulomd.com.

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

*Jeffrey M. Goodloe, MD, NRP, FACEP, FAEMS, LSSBB* – Chief Medical Officer
*Curtis L. Knoles, MD, FAAP* – Associate Chief Medical Officer
*David S. Howerton, NRP* – Division Chief – Medical Oversight - West (Metro Oklahoma City)
*Duffy McAnallen, NRP* – Division Chief – Medical Oversight - East (Metro Tulsa)
*Matt Cox, NRP* – Division Chief - Critical Care Analytics
*Kimberly Hale* – Administrative Assistant (left employment with OMD in January 2021)

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.

All OMD division chiefs 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.

## 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 Chief Medical Officer to over 2,700 non-physician EMS professionals serving over 1.5 million residents, workers, and visitors of the affiliated cities.

Just as an individual has right to access an educated, qualified, and credentialed 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 experiences sudden, unexpected medical symptoms from relatively benign, though concerning pain, to the extreme severity of 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, accompanying education and training, and a comprehensive credentialing program.

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. Protocols were added, updated, and/or reformatted consistently at MCB meetings this year as summarized within this annual report. All MCB treatment protocols continue to follow the now MCB-recognized innovative, evidenced-based format. In other words, additional clinical capabilities and care are being added and provided for the patients needing those most. This commitment to excellence in pre-hospital emergency care reflects the drive and energy of the MCB, Chief Medical Officers, OMD professionals, leaders in affiliated fire departments and EMSA, and all field EMS professionals.

Throughout the operational year, these MCB treatment protocols continued to be referenced and indexed by benchmarking EMS systems within the United States and even abroad. The patients of this EMS system can continue to rest assured they are receiving the absolute best in pre-hospital emergency medical care.

## Key Advances in Medical Treatment Protocols

*Handtevy Pediatric Emergency Standards* – fully operationalized a globally recognized system to improve accuracy in medication dosing and equipment sizing for pediatric patients. This includes Handtevy organized equipment cases on emergency apparatus as well as a smartphone app that is designed for patient-side use.

*EleGard® Head-Up CPR Device* – approving utilization of the EleGard device to synchronize raising the head and upper thorax during CPR to a limit that optimizes cardio cerebral perfusion by preserving arterial flow and improving venous drainage from the cranial vault. Affirming research included in the FDA approval of the device supports an increase up to a relative 50%+ in neurologically intact survival from sudden cardiac arrest. (This device will be piloted in the EMS system in the Edmond Fire Department, though available to any agency wishing to include this latest advance in the EMS system's "bundle of care" for sudden cardiac arrest.)

*Categorization of Hospitals* – updating clinical care capability additions at multiple hospitals in the metropolitan Oklahoma City and metropolitan Tulsa areas.

## MCB/OMD Administrative & Clinical Policies

Historically, most administrative actions of the MCB/OMD prior to July 2009 had been "management by memo" in structure. Over time as the EMS system grew and structure, those memos proved 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 Chief Medical Officer specified creation of an MCB/OMD Policy and Procedural Manual in the 2009 – 2010 operational and fiscal year to accompany the Medical Treatment Protocols. Like the treatment protocols, this continues to prove a multi-year project due to scope and nature of always advancing the practice of EMS medicine and its oversight. During this operational year, the MCB/OMD policies & procedures were reviewed, updated and available on the MCB/OMD website and redesigned smartphone and tablet app.

## MCB/OMD Review of System Performance Parameters

*Basic Life Support EMSA Ambulances* – Working in conjunction with EMSA leadership and GMR operations (until their separation from the EMS system after November 2020), this tier of ambulance response has continued to prove successful in its third year of operation. This program allows EMTs to fully utilize their assessment skills and garner valuable experience with electronic health records. Efficiency for Advanced Life Support (Paramedic) Ambulance response is gained as BLS ambulances can be allocated to a scope of incidents, including hospital to home, BLS level hospital to hospital, organ harvesting team transfers, and helipad/airport to hospital with flight crews maintaining primary patient care responsibility. EMTs assigned to this program have performed notably well.

*Response Times* – EMSA calculates and supplies MCB/OMD with monthly performance reports regarding response times by Global Medical Response (formerly known as American Medical Response) through November 2020 and now by its self-led operations. All monthly reports supplied to MCB/OMD by EMSA were personally reviewed by the OMD Division Chiefs, the Chief Medical Officers, and the MCB. Reports in this past year most typically indicate aggregate compliance with response time standards in the metropolitan Tulsa area. These same reports in this past year most typically indicate aggregate non-compliance with response time standards in the metropolitan Oklahoma City area. Inabilities to meet expected response times were most consistently linked to paramedic staffing challenges, limiting the number of ambulances in service to levels below that desired. This proved a major factor in EMSA's separation of Global Medical Response from the EMS system after November 2020. EMSA continues to assure the MCB/OMD that it is diligently working in recruiting paramedics to the metropolitan Oklahoma City area with plans to increase the number of staffed ambulances. Fire departments, particularly the larger departments, such as Oklahoma City and Tulsa, supply their response times for EMS-related calls monthly as well. These reports are personally reviewed by the OMD Division Chiefs and the Chief Medical Officers monthly. All these fire department-based reports indicate reasonable response time performances.

Response time allowance changes approved by the EMSA Board of Trustees that went into clinically operational effect on November 1, 2013 continued throughout this operational year. This specifically allowed for the historical 8:59 Priority 1 standard to be extended to 10:59 within the beneficiary cities. Priority 2 responses were also extended, specifically from 12:59 to 24:59, with notable cessation of red lights and sirens (RLS) use. Significant safety benefits of these changes were anticipated and observed during their eighth operational year, yet no clinical detriments in patients relatable to these response time allowance changes were noted by the Chief Medical Officers and OMD Division Chiefs. The program continues unchanged in the metropolitan Tulsa area. Due to the response time deficiencies in the metropolitan Oklahoma City area, EMSA leadership has elected to selectively utilize RLS use in Priority 2 responses at the time of this report. The Chief Medical Officer has indicated absence of clinical rationale for the decision and concern of safety implications. EMSA leadership has concurred that the change will be temporary in duration and the intent is to return as soon as possible to the program operation as it continues in metropolitan Tulsa.

*Hospital-Initiated EMS Diversion Requests* – GMR through November 2020 and now EMSA calculates and supplies to the EMSA CIO for 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 were personally reviewed by the OMD Division Chiefs, the Chief Medical Officers, and the MCB. Most 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.

A continuing area of concern related to hospital emergency department patient saturation is EMS "bed delay" times. This time period begins when EMSA EMTs and paramedics arrive in an emergency department with the patient packaged on the stretcher and encounter no available beds in which to transfer the patient for ED care and extends to the time in which a transfer into a bed or chair occurs. The Chief Medical Officer advised the MCB of continuing concerns, stemming from prior analysis prepared by EMSA, supporting anecdotal experiences detailed in daily EMSA Field Operations Supervisor/District Chief Reports that ambulances were being held, at times, over 1 hour at hospitals. The problem continues to be more prevalent in Tulsa than Oklahoma City, likely due to fewer hospitals serving its metropolitan area. The COVID-19 pandemic, while once having significant impact upon hospital emergency department volumes, specifically decreasing them by up to 40%, subsequently proved an additional challenge with then overloaded area hospitals and particularly their ICUs. The Chief Medical Officer now observes an unfortunate return of "bed delay" as patient volumes have normalized back to historical volume trends.

*Trauma Priority & Destination Reports* – GMR through November 2020 and now EMSA 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 GMR were personally reviewed by the OMD Division Chiefs, the Chief Medical Officers, and the MCB. All reports indicate continuance of the following: 1) Priority One Trauma patients comprise <15% of traumas monthly, 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* – GMR through November 2020 and now EMSA 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, Advanced EMTs and/or 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 Division Chiefs and the Chief Medical Officers. 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 Division Chiefs and the Chief Medical Officers 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) has improved to nearly 13.6%, outcomes in Oklahoma City and Tulsa are well above this national aggregate performance. See Attachment A – 2019 Cardiac Arrest Report, reflecting an Utstein survival of 41.42%, the second highest in the recorded history of the EMS system! The 2020 Cardiac Arrest Report is being completed at the time of this Annual Report and will be posted on the MCB/OMD website ahead of next year's Annual Report.

*Response Vehicle Inspections* – OMD Division Chiefs 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

*COVID-19 Updates* – As the SARS-CoV-2 pandemic continued impacting the United States, Dr. Goodloe identified the need to continue delineating roles within the OMD team. Over this last fiscal year, Dr. Goodloe authored an additional 35 evidence-based medical updates designed to inform and empower EMS personnel to provide the best available care to patients with symptoms consistent with COVID-19, while protecting themselves with appropriate PPE practices. Most Updates reflect 8-10 hours of scientific research and distillation of findings into approachable consumption. These Updates were also designed to keep personnel families, key governmental leaders, the MCB, Fire Chiefs and Fire Department leadership teams, local GMR leadership (during applicable timeframes), and the EMSA Board of Trustees continuously informed as well about key advances in the medical response to COVID-19. These Updates were sought by multiple EMS physicians across the United States and continue to be regularly posted as a resource to the entire membership of the National Association of EMS Physicians and visitors to the naesmp.org website that seek COVID-19 information. This work will continue throughout our EMS system's response and planning to the SARS-CoV-2 pandemic.

*Cardiac Arrest Outcomes Optimization Program (aka "50/50" Program)* – Building upon the EMS system's pattern of admirable success in aggressively resuscitating cardiac arrest victims, the MCB continued promulgated sophisticated resuscitation team dynamic protocol standards. These standards detail optimal team role performances to maximize chest compression fraction time, reduce delays in timely defibrillation, and achieve coordinated efforts in lifesaving.

Cardiac arrest resuscitation team dynamics continue to be reinforced during continuing education for all current EMS professionals in the system and are reviewed in focused detail during the orientation for all EMS professionals joining this system. Coordinated skill precision is further reinforced through individual feedback supplied to all EMS professionals involved in a specific resuscitation. Utilizing the CodeSTAT software platform, resuscitation care elements (chest compressions, ventilations, defibrillations) are analyzed by the OMD Division Chief - Critical Care Analytics, annotated for clinical event accuracy, and then reported to the Chief Medical Officers, OMD Division Chiefs – Medical Oversight, and relevant agency CQI personnel to then be forwarded to the frontline clinical personnel actually performing the care analyzed. This feedback is essential in reinforcing excellent care provision and helping individuals make desirable modifications for future resuscitations. Attempted resuscitations are formally annotated, and reviews are returned to CQI personnel often within 72-96 hours to forward to front-line credentialed personnel.

The EMS system has shown abilities to produce approximately 30-40+% neurologically intact survival among victims experiencing a citizen witnessed, citizen CPR initiated, and EMS discovered shockable cardiac rhythm upon their arrival. While very good in its impact upon cardiac arrest survival, the MCB/OMD has stated a system goal of achieving 50%+ survival in the same patient types in both metropolitan Oklahoma City and Tulsa, thus the program's "50/50" description and our endless enthusiasm to achieve this goal in a multi-year progression program. See Attachment A – 2019 Cardiac Arrest Report, reflecting an Utstein survival of 41.42%, the second highest in the recorded history of the EMS system! The 2020 Cardiac Arrest Report is being completed at the time of this Annual Report and will be posted on the MCB/OMD website ahead of next year's Annual Report.

*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. Work continues in rectifying these dynamics to 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. Multiple OMD-produced educational videos are also accessible on the okctulomd.com website.

*EMS Professional Credentialing Testing* – OMD Division Chiefs – Medical Oversight, with oversight by the Chief Medical Officer, continued the practice of verification of clinical skills performance and knowledge base testing of all professionals on a biannual basis. Continued updating of all personnel credentialing written examinations was performed with direct involvement of the Chief Medical Officers. A computer-based testing platform allows for more efficient testing access and completion for EMS professionals and OMD professionals alike.

*EMS System Promotion* – Metropolitan Oklahoma City and Tulsa is blessed with the multitude of dedicated EMS professionals in its EMS system. Dr. Goodloe and Dr. Knoles, with endorsement by the MCB, have continued 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. The cumulative results advance the interests of patients, EMS professionals, and the cities within the service area. Specific actions in this realm were quite limited this year due to most scientific conferences being cancelled in observance of the ongoing pandemic, though included:

EMS State of the Science XXII/"A Gathering of Eagles" (Goodloe)
Cutting Edge Remarks: What are the Best Practices for Field Amputations – and Could EMS Do Them?
Preventing Deaths from "Natural" Causes: Why is Preparation for Natural Disasters More than Just a Priority?

*Response Configurations* – When a caller dials 911 with a medical complaint in metropolitan Oklahoma City or Tulsa, that complaint is coded into one of approximately now 1,900 condition and 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. 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 has previously been agreed to by the affiliated fire departments. During this operational year, in scheduled and ongoing analysis, the Chief Medical Officer and OMD personnel conducted further review of each MPDS code for EMS system response configuration and priority for ambulance response, making recommendations for changes to few codes that were subsequently approved by the MCB.

*EMSA Electronic Health Records Availability to Emergency Department/Hospital-Based Medical Practitioners* – MCB physicians, the Chief Medical Officers, and OMD professionals worked collaboratively throughout the operational year with EMSA's Jim Winham and Frank Gresh to increase the accountability of GMR through November 2020 and then EMSA itself to provide timely patient care documentation in accordance with existing MCB policy.

*Regional Medical Oversight Team "Best Practices" and Efficiency Identification* – The Chief Medical Officers and all OMD professionals hosted the fourth Mid-America Symposium for EMS Medical Oversight in Tulsa, with participation by the EMS medical oversight teams from Wichita/Sedgwick County, Kansas (led by John M. Gallagher, MD, FACEP, FAEMS), Johnson County, Kansas (led by Ryan Jacobsen, MD, FACEP, FAEMS), and Kansas City, Missouri Fire Department (led by Erica Carney, MD, FAEMS) as well as Colorado Springs, Colorado Fire Department (led by Eric "Stein" Bronsky, MD). This continues to be the first of its kind, team-oriented, medical oversight for EMS convocation and yielded outstanding efficiencies in protocol development, continuing education creation, and simulation testing practices. A fifth event is planned for the coming operational year, if present travel will continue to allow.

**Directions for Operational & Fiscal Year 2021-2022**

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. Cardiac arrest resuscitative care will continue to be a hallmark of intervention efforts over the coming year, with anticipation of continuing formal research into the early impacts of adding active compression-decompression CPR. We also are eager to see advances enabled by the EleGard head-up CPR device, with hopes to expand its usage throughout the EMS system.

Additional strategic planning, including regional EMS system medical oversight collaborations and benchmarking, will occur within the coming operational year to continue to build upon service to organizations comprising the EMS System for Metropolitan Oklahoma City and Tulsa, EMS professionals within those organizations, and the patients we collectively are honored and humbled to serve.

We anticipate developing strategic plans more focused upon educational content production in-house for delivery to the EMS professionals in this system and beyond, in a multi-year, graduated capabilities model.

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. Continued effective 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.

During the 2010-2011 operational year, the Medical Director adopted the following philosophy of his Seattle counterpart:

On Achieving Success

"There is no 'silver bullet.' There is just hard work."
*Michael Keyes Copass, MD.*

This sentiment continues to be found in prominent position upon every desk at which work is performed by the Chief Medical Officers, the OMD Division Chiefs, and the Administrative Assistant. It will remain in such places throughout Dr. Goodloe's tenure as the Chief Medical Officer, serving as a constantly visible reminder of the expectations in meeting the incredible trust afforded to MCB/OMD by the patients we serve.

Hard work, focused enthusiasm, and the relentless pursuit of optimal clinical care and outcomes continue to advance both the science and art of EMS medicine in the EMS System for

Metropolitan Oklahoma City and Tulsa. We again enter the coming year, Operational & Fiscal Year July 2021 – June 2022, convinced it will be the finest in the history of the MCB/OMD.