



ANSWERING THE CALL

MILWAUKEE COUNTY
OFFICE OF EMERGENCY MANAGEMENT
2022 ANNUAL REPORT



**MILWAUKEE
COUNTY**



MESSAGE FROM MILWAUKEE COUNTY EXECUTIVE DAVID CROWLEY



For 75 years, emergency management and community preparedness has centered around four phases: mitigation, preparedness, response, and recovery. In the last few years, the work in all four phases of emergency management

has kept a demanding pace, but Milwaukee County's Office of Emergency Management (OEM) continues to step up to the task and answer the call of Milwaukee County residents.

We continued efforts to help Milwaukee County recover from the global COVID-19 pandemic by facilitating the procurement of personal protective equipment for community agencies and local municipalities. The Office of Emergency Management facilitated the delivery of this personal protective equipment to community agencies and local municipalities throughout the county. OEM also kept up with the demanding task of preparing for and coordinating the response in the wake of major summer and winter storms in 2022. Storms resulting in traffic accidents and electrical power outages required rapid, consistent, and transparent situational communication to members of the public — as well as guidance on where residents could receive helpful resources as storm recovery continued. In addition, the department continued to play an important role in coordinating security for large-scale events throughout Milwaukee County, including events like the Red Bull Flugtag, which saw more than 50,000 spectators, and the thousands of residents packing the Deer District to watch the World Champion Milwaukee Bucks defend their title in the NBA Playoffs. OEM also had a familiar role in ensuring the security of parades and festivals Milwaukee County is known for hosting each spring and summer.

OEM also contributes to the collection and display of health data throughout Milwaukee County, including COVID-19 data, EMS system data, and overdose event data. Datasets are all transparently displayed for partners and community stakeholders to view on the Milwaukee County website. Transparent data collection and sharing are vital parts of ensuring accountability on Milwaukee County's journey to achieving race and health equity.

These highlights are in addition to operating the OASIS platform system, which is integral in collaborating with municipal partners and facilitating communication between public safety agencies in both Milwaukee and Waukesha counties.

Director Libal and the OEM staff know emergency management is an area of continuous improvement that takes a whole community to succeed. We simply can't deliver excellent emergency management for 19 different municipalities on our own. As the demands of emergency management have grown in recent years, the department has succeeded in building key relationships with municipal leaders and stakeholders in communities across Milwaukee County.

Between the residents who deserve assistance during their darkest hour, the partners who support and help execute emergency preparedness plans, and the community stakeholders who provide input for OEM plans and operations, I am grateful for and inspired by the collective commitment to the safety and well-being of Milwaukee County residents.

I look forward to continuing to move forward alongside the dedicated, skilled, and strong team at the Office of Emergency Management who wake up everyday enthusiastic about serving their neighbors and keeping Milwaukee County safe.

David Crowley
Milwaukee County Executive

Crowds of fans gathered in the Deer District Plaza near the Fiserv Forum to support the Milwaukee Bucks during the National Basketball Association's post-season tournament games. The Office of Emergency Management played an important part in coordinating safety and security.

MESSAGE FROM OFFICE OF EMERGENCY MANAGEMENT LEADERSHIP



Milwaukee County's Office of Emergency Management (OEM) is a public safety organization comprised of the Emergency Medical Services, 911 Communications, Radio Services, and Emergency Management divisions. In alignment with Milwaukee County's race and health equity vision, OEM strives to create resilient communities through collaboration and increased access to public safety resources.

In the world of emergency management, we often speak of planning, preparedness, and mitigation. Understanding that disparities only exasperate disasters, we are working closely with our community partners to engage populations who have been historically underserved, overlooked, and misunderstood.

To increase equitable access to public safety services, our 911 Communications and Radio Services divisions strive to ensure the availability of a reliable, cost-effective, and timely interoperable communication network throughout Milwaukee County.

The Milwaukee County EMS system is a collective of 15 municipal and county agencies committed to working together to ensure quality patient care. Under the medical direction of the Medical College of Wisconsin, the EMS Division provides

administrative support and oversight of the Milwaukee County EMS system.

Providing responsive and high-quality public safety services throughout Milwaukee County requires a collaborative strategy between all municipalities within Milwaukee County. To further these efforts, OEM is excited to see the approval of funds to support the development of a regional forensic science building, located at the Milwaukee Regional Medical Center campus and set to house the services we provide, the Office of the Medical Examiner, and the State Crime Lab. This project will offer new opportunities for collaboration between Milwaukee County, the state, and the region's healthcare institutions.

The Office of Emergency Management is focused on reaching even deeper into the functions of Milwaukee County and the surrounding region to locate improvements that will benefit the citizens we serve. In 2022, OEM was very successful at this by securing funding through the American Rescue Plan Act (ARPA) and other grant funding to make significant improvements such as a countywide tornado siren replacement project, emergency medical dispatcher training for 911 Communications, increased cyber security for the OASIS radio system, and the standing up of more advanced EMS countermeasures to combat the opioid crisis. Through these and other programs and projects, the Office of Emergency Management continues working toward making Milwaukee County the healthiest county in Wisconsin.

Cassandra Libal
Director

Chris McGowan
Deputy Director

We help people in extraordinary times.

MILWAUKEE COUNTY OFFICE OF EMERGENCY MANAGEMENT
MISSION STATEMENT

OVERALL BUDGET SUMMARY

Category	2019 Actual	2020 Actual	2021 Budget	2022 Budget	2022/2021 Variance
Expenditures					
Personnel Costs	\$3,592,424	\$3,671,546	\$3,675,101	\$4,047,298	\$372,197
Operation Costs	\$3,691,555	\$3,365,163	\$3,564,071	\$5,220,991	\$1,656,920
Debt & Depreciation	0	0	0	0	0
Capital Outlay	\$21,122	0	0	0	0
Interdepartmental Charges	(\$30,888)	(\$410,232)	(\$3,996)	\$12,456	\$16,452
Total Expenditures	\$7,274,213	\$6,626,477	\$7,235,176	\$9,280,745	\$2,045,569
Revenues					
Direct Revenue	\$678,808	\$624,575	\$710,219	\$680,562	(\$29,657)
Intergovernmental Revenue	\$570,063	\$1,480,386	\$574,816	\$679,924	\$105,108
Indirect Revenue	0	0	0	0	0
Total Revenues	\$1,248,871	\$2,104,961	\$1,285,035	\$1,360,486	\$75,451
Tax Levy	\$6,025,342	\$4,521,516	\$5,950,141	\$7,920,259	\$1,970,118
Personnel					
Full-Time Positions (FTE)	53.0	53.0	55.5	59.25	3.75
Seasonal/Hourly/Pool \$	\$487,985	\$350,305	\$244,552	\$403,601	\$159,049
Overtime \$	\$217,716	\$268,934	\$219,756	\$177,000	(\$42,756)



EMERGENCY MANAGEMENT

Paul Riegel | Division Director

MISSION & VISION

The Emergency Management Division ensures a safer, more resilient community by coordinating efforts to mitigate against, prepare for, respond to, and recover from emergencies and disasters in Milwaukee County. This is accomplished through emergency planning, training, exercise development and facilitation, preparedness education, and collaboration with partners from the whole community.

SERVICE SUMMARY

In 2022, the Emergency Management division focused much of its effort on increasing resiliency in Milwaukee County through community outreach, training and exercises, technology improvement projects and focused planning efforts. The division partnered with 17 partner organizations to reach populations facing risks from disasters, including children, older adults, persons with disabilities, low-income households, those with limited English proficiency, and homeless individuals. Through targeted outreach, the division engaged 2,859 individuals about how to make a household emergency plan, build an emergency kit, stay informed of local emergencies, and get involved in the community.

Leading Community Preparedness — Strengthening and rebuilding Southeast Wisconsin Corporations and Organizations Active in Disaster (SE WI COAD) was a major focus of the Emergency Management Division in 2022. This coalition fills a vital role in humanitarian efforts in the wake of disaster both large and small. We partnered with Waukesha County Emergency Management to coordinate

improvements and build membership to fill vacant stakeholder areas.

The Emergency Management Division also supported a number of events throughout Milwaukee County, both planned and unplanned. Some of the notable events we assisted in 2022 were coordinating sheltering for over 100 homeless persons during an extreme cold weather event and providing virtual Emergency Operations Center support for several severe weather events.

Technology Updates — The Emergency Management Division invested in technology updates in 2022 that will enhance our ability to serve socially vulnerable populations. A major upgrade to tornado sirens throughout Milwaukee County was funded in 2022 and will be completed in early 2023. This upgrade ensures the reliability of the tornado sirens, which are often the only warning device available to the homeless population.

MAJOR ACCOMPLISHMENTS

The Emergency Management Division developed a damage assessment dashboard that allows officials to provide resources in the wake of a disaster based on social vulnerabilities, instead of just the severity of physical damage. This dashboard is a cutting-edge tool in emergency management and continues to strengthen our efforts to provide equitable services in Milwaukee County.

Director Cassandra Libal and Emergency Management Coordinator Natalie Czarkowski completed the 128-hour Federal Emergency

Management Agency's (FEMA) National Emergency Management Basic Academy. They are now part of a cohort of only 3,000 individuals nationwide who have completed the program since it was launched in 2011.

TRAINING & EXERCISES

OEM coordinates a training and exercise program to grow the skills, abilities, and experience of emergency personnel and test plans, policies, procedures, equipment, and facilities. In 2022, Milwaukee County OEM participated in nine exercises with 64 state and local partner agencies to validate plans for a variety of scenarios. A few examples included:

- Facilitated a full-scale exercise testing agency plans in the event of power loss to Milwaukee County's 911 Communication Center.
- Joined with dozens of agencies in a full-scale airport exercise simulating an airliner crash at General Mitchell International Airport.
- Helped plan and participated in the Milwaukee Regional Medical Center's Emergency Planning Committee's annual functional exercise, testing plans in response to an active shooter.



Director Libal and Emergency Management Coordinator Natalie Czarkowski completed the 128-hour Federal Emergency Management Agency's National Emergency Management Basic Academy, held in Oshkosh.



2,859

INDIVIDUALS WHO RECEIVED PREPAREDNESS EDUCATION



9

TRAINING EXERCISES WITH 64 STATE & LOCAL PARTNERS



20

OUTREACH EVENTS

COMMUNITY ENGAGEMENT

In 2022, OEM participated in these 13 diverse coalitions working to support multi-jurisdictional coordination before, during, and after disasters. By continuing to expand preparedness partnerships, OEM will increase the collective impact of local preparedness efforts:

- Local Emergency Planning Committee (LEPC).
- Milwaukee County Fall Prevention Coalition (MCFPC).
- Milwaukee County Public Health Collaborative.
- Milwaukee Extreme Weather Taskforce.
- Milwaukee Health Care Partnership.
- Milwaukee Regional Medical Center Emergency

Planning Committee (MEPC).

- National Weather Service Integrated Warning Team (NWS IWT).
- North Shore Emergency Planning Team (NSEPT).
- Southeast Wisconsin Citizens and Community Organizations Active in Disasters (SEWI COAD).
- Southeast Wisconsin Healthcare Emergency Readiness Coalition, Inc. (HERC) Region 7.
- Southeast Wisconsin Homeland Security Partnership (SWHSP).
- Wisconsin Heat Health Network.
- Wisconsin Voluntary Organizations Active in Disasters (WI VOAD).

EMERGENCY MEDICAL SERVICES

Dan Pojar | *Division Director*

The Emergency Medical Services (EMS) division had a successful and impactful 2022. EMS received a sustained increase in funding that supported the enhancement of programming aligned to address inequity within EMS, while also adding new technology to EMS providers. Through a focus on capturing accurate data, EMS will leverage data to improve systems and further inform and create awareness for the public about health and safety measures.

MISSION & VISION

OEM-EMS/MCW works tirelessly to ensure the highest quality of patient care with a focus on equity, compassion and innovation.

SERVICE SUMMARY

Milwaukee County's EMS services are expansive and provide a range of services throughout the County. Below is a list of programming provided.

- Milwaukee County EMS Council.
- EMS Administrative Review.
- Emergency Services Coordination Committee.
- Pediatric Emergency Care Applied Research Network.
- Wisconsin State Board of EMS.
- Milwaukee County Association of Fire Chiefs.
- Overdose Fatality Review Board.
- City-County Heroin, Opioid Cocaine Task Force.
- Continuous Quality Improvement Program.
- Milwaukee County Public Health Collaborative.
- OD-PHAST Epidemiology Intelligence Team.

- Cardiac Arrest Registry to Enhance Survival.
- Milwaukee County EMS AED Program.
- PulsePoint.
- American Heart Association Mission Lifeline.

MAJOR ACCOMPLISHMENTS

CPR Saves Lives — Twice in 2022, OEM-EMS responded to patients suffering from a witnessed cardiac arrest. This is the most sensitive time condition that requires urgent recognition and intervention in order to have a chance at saving a life. With the rapid recognition and response by our EMS crews, both patients were successfully resuscitated and discharged home with very good clinical outcomes.

The number of cardiac arrests has sustained a 20% increase since 2020, with more than 1,200 per year occurring in Milwaukee County. If you are a bystander during cardiac arrest, the steps to support are recognize cardiac arrest – call for help – start chest compressions – use an AED if available.

Equity in EMS Subsidy Funding — Five years before the target, OEM-EMS met the subsidy funding goals for paramedic level operations across Milwaukee County. With support from County Executive Crowley, operations' subsidy increased from \$1.5M to \$3M dollars. With the additional \$1.5M, EMS was able to achieve the 2027 target early and demonstrate our commitment to equity.

ImageTrend Integration Project — Increase funding allowed EMS to partner with MCW EMS

Medical Direction and the Milwaukee County Association of Fire Chiefs and invest \$500,000 to improve system operations, such as ImageTrend, an electronic patient care record system. Consolidation into one single software enhances EMS' access to tools and analytics and common reporting practices. This upgrade also creates the opportunity for enhanced data analytics, as well as partnering with the health systems to better share data and streamline patient care. This demonstrates our commitment to breaking down silos and maximizing access to quality services.

EMS Dashboards:

COVID-19 Vaccination Dashboard — Provides detailed information about rates of first dose and first booster uptake among residents of Milwaukee County. The dashboard has helped inform vaccination media campaigns and targeted vaccination clinics.

COVID-19 Wastewater Dashboard — Tracks the amount of virus detectable in two Milwaukee sewersheds. With the increased availability of rapid at-home testing, the wastewater dashboard helps to provide visibility to trends in COVID-19 transmission in the community.

EMS Trends Dashboard — Provides a glimpse into the volume of patient encounters and transports by Milwaukee County EMS providers each year. The dashboard also documents alerts for specialty conditions, such as stroke, cardiac arrest, STEMI, and trauma.

Hospital Diversions Dashboard — Documents the frequency at which hospital resources become unavailable to new or incoming EMS patients.

Continuous Quality Improvement Program Stroke Dashboard — Monitors key performance indicators related to high quality stroke care. The dashboard is used at monthly CQIP meetings to communicate with EMS partners.

AWARDS

Professional Ambulance Association of Wisconsin 2022 Stars of Life

2022 Special Achievement in GIS Award — Milwaukee County's COVID-19 Surveillance Dashboard compiled vital information and presented it in a digestible format that allowed public health professionals to make recommendations that would keep residents safe, understand the disease burden on demographic or geographic lines, and equitably administer life-saving vaccines.

Wisconsin EMS Association 2022 Excellence in Service Awards — Dan Pojar was awarded the 2022 EMS Support Person of the Year for his actions taken to protect the Milwaukee County EMS system during the COVID-19 pandemic, which included testing, vaccinations and surveillance.

American Heart Association Mission Lifeline Gold Award — Milwaukee County EMS earned a seventh consecutive "Gold Recognition" from the American Heart Association, reflecting the excellent heart attack care the division provides. Milwaukee County paramedics and hospital partners did better than the "Gold" standard of restoring blood flow in blocked coronary arteries within 90 minutes from first EMS contact in 75% of patients.



Earlier this year, Emergency Medical Services Director Dan Pojar was awarded the Wisconsin EMS Association's 2022 EMS Support Person of the Year for protecting the EMS system during the COVID-19 pandemic.

Officials Honor Schupp for Life-Saving Role

In July, a child was found pulseless and non-breathing at the bottom of a pool. Nancy Schupp, command duty officer in the Office of Emergency Management's (OEM) 911 Communication Division, led a bystander through administering CPR. Once officers arrived on the scene, they continued CPR until fire department paramedics arrived. The child regained a pulse and started to cry while in transport to the hospital; he was later released with no deficits after a short stay.

The bystander thanked Nancy for being so calm and patient with her. Nancy replied, "You were so calm, so that helped me."

Schupp was recognized at the Brown Deer Village Board meeting by officials from the North Shore Fire Department and received a commendation for her life-saving role in the incident. Others present with Nancy were two bystanders, a North Shore 911 communicator, police officers and emergency professionals from North Shore Engine 81 and Med 81 — and Isaac, the 2-year-old boy whose life they all helped save.

Initiating CPR right away rather than waiting for medical personnel to arrive can make a big difference. CPR initiated by a bystander can nearly double the chance of survival from cardiac arrest, from about 7% to 14%. That is why OEM training includes Bystander CPR and pre-arrival CPR instruction. It also shows the important role OEM communicators play on the other end of the phone as a vital link in the chain of survival.



Command Duty Officer Nancy Schupp (right) was recognized during a village board meeting in Brown Deer that was also attended by the 2-year-old boy whose life she helped save.

OEM Team Contributes to Life-Saving Cardiac Arrest Response

During an event at Fiserv Forum early in February, a middle-aged male patron collapsed from a medical event and went into cardiac arrest. Cardiac arrest is a condition where the heart stops effectively beating and does not pump blood throughout the body. The emergency response crews from both the Office of Emergency Management (OEM) and the Milwaukee Fire Department rapidly recognized the situation and began resuscitation efforts, which included chest compressions, vascular access, airway management, medication administration, and cardiac interpretation, as well as administered defibrillation (AED), which shocks the heart with electricity.

After multiple shocks, the EMS team was successful in restoring the patient's normal heartbeat and managed his vital signs as a paramedic ambulance transported him to the hospital. He was discharged home a few days later and was reported to be doing well.

The team from OEM's Emergency Medical Services division consisted of EMTs Lindsay Whitaker and Allyson Flanagan and Medics Raul Medina and Jeff Friedrich.

Nationally, the survival rate from suffering cardiac arrest is approximately 9%. It is the most time-sensitive emergency, one that requires rapid recognition and rapid intervention — typically from a bystander recognizing the need for chest compressions and application of an AED. Milwaukee County has a lower than average bystander intervention rate, which the Emergency Medical Services division is focused on improving. Locally, the entire Milwaukee County EMS system encounters approximately 1,200 patients each year that are in cardiac arrest, or approximately four per day.

A NEW STATE-OF-THE-ART FACILITY FOR FASTER COLLABORATION AND COORDINATION

Co-locating the Medical Examiner's Office, the Office of Emergency Management, and the State Crime Lab in a new Forensic Science and Protective Medicine Center will take emergency response coordination to a level never previously seen in Wisconsin. It will enhance public safety, save lives, and allow for more efficient and cost-effective responses to emergency situations. The new center will be located in the Milwaukee Regional Medical Center.

Conceptual rendering of the Center for Forensic Science and Protective Medicine. Rendering by HGA





911 COMMUNICATIONS

Kinnyetta Patterson | Division Director

MISSION & VISION

The Milwaukee County Office of Emergency Management 911 Division is dedicated to providing the highest level of excellence and professional emergency services to Milwaukee County.

Our vision is to work diligently to fulfill our duties in a manner that inspires trust, confidence, and partnership. OEM 911 Communications achieves the highest level of public confidence through continuous improvement, teamwork and exceptional levels of professionalism to those we serve.

SERVICES SUMMARY

The OEM 911 Communication Division serves as the Public Safety Answering Point (PSAP) for Milwaukee County. Milwaukee County OEM provides cellular 911 call-taking services for West Allis, West Milwaukee, Wauwatosa, South Milwaukee, Greenfield, Cudahy, Greendale, and occasionally from other PSAPs within Milwaukee County. By screening redundant calls, overall volume is reduced, and staff strain is mitigated. Dispatchers take 911 calls and coordinate services with the Medical Examiner's Office, the Department of Transportation's Highway Division, dispatch sheriff deputies, park rangers, and district attorney investigators.

Training — In 2022, the 911 Communications Division earned national standard compliance from the Association of Public Safety Communications Officials (APCO). In 2023, the office will receive Emergency Medical Dispatch training and become certified by Q2 of 2027. Additionally, all staff will complete Crisis Intervention Training and begin the

implementation of a NextGen ESInet, a system that allows citizens the ability to initiate a quicker response.

Command Duty Officers — The OEM Command Duty Officers (CDO) are responsible for 24/7 emergency messaging among departments and agencies county and region wide. CDOs transfer data received from EMS field providers to hospitals about vital patient code to ensure optimal care immediately upon patient entry. In 2022, CDOs activated the trauma team with a 98% accuracy.

The team also provides Dispatcher Assisted CPR to callers witnessing cardiac arrest. The CDOs are a vital link in the chain of survival by providing CPR instructions prior to EMS arrival. CDOs provide this service to Greendale, Hales Corners, Franklin, South Milwaukee, Cudahy, and, until recently, Bayside Communications.

Quality Assurance — The Quality Assurance (QA) Coordinator increased the number of QA evaluations done per person, per month bringing OEM closer to the 2% APCO standard. The QA also created new evaluation forms to better fit the duties of the 911 Dispatchers.

Technology — In 2022, Text-to-911 went live. Milwaukee County residents near county cellphone towers can text 911 emergency services if they are unable to make a voice call. The service increases the equitability of our public safety resources by enhancing accessibility for deaf and hard-of-hearing citizens. Text-to-911 received 153 messages thus far.

The implementation of CAD2CAD allow adjacent 911 centers to dispatch squads, fire rigs, and ambulances across municipal borders. This enhancement allows fire dispatchers from all agencies to send and receive requests for assistance electronically.

OEM is the only Wireless Emergency Alert (WEA) authorized agency in Milwaukee County. WEA messages are text message warnings, similar to AMBER alerts, sent to alert citizens who may be in harm's way without the need to subscribe to a specialized app or platform.

Staffing — In 2022, 911 Communications was able to promote our Leads to Supervisors, increasing supervisor visibility on the floor. This change although needed, required innovative staffing models to maintain exemplary service and relief stress on our personnel. As we move into 2023, we were able to secure additional funds to not only increase the salary of our staff, but we will also be able to secure additional staff (both full-time and hourly).

COMMUNITY SERVICES & ENGAGEMENT

- Translation services offers over 100 different language translations available ensuring response during emergencies is inclusive to diverse community.
- Serves as a member of the Wisconsin 911 Subcommittee under the direction of the Department of Military Affairs.
- Participated in coordinated effort with area shelters and domestic violence centers for Text-to-911 implementation.
- Supported the United Way Silent Auction. The winner was allowed to set off the tornado sirens.

AWARDS

Nancy Schupp, a Command Duty Officer, was recognized by North Shore Fire earlier this year. She was given a commendatory letter for assisting in saving a child's life by providing CPR instructions until police and fire arrived.



RADIO SERVICE

Dan Weber | Division Director

MISSION & VISION

Mission: Maintaining unified public safety through advanced interoperability

Vision: OEM radio continues to provide reliable, and equitable communications, further enhancing the quality of life and services provided to those within Milwaukee County.

As the host agency of the Milwaukee County subsystem of the Organization of Affiliated Secure Interoperable RF Subsystems (OASIS), OEM administers and maintains an 800MHz P25 digital radio system providing mission critical and interoperable communications for public safety agencies and first responders in Milwaukee and Waukesha Counties. Operational decisions are rooted in the core objectives of efficiency and building equitable access to emergency communication services.

SERVICE SUMMARY

OASIS Microwave Backhaul — The OASIS Microwave Backhaul replacement was a \$3.6M funded initiative to increase the overall longevity of the system. The upgrade includes all radio sites and PSAP infrastructure that is critical to data transmission.

Critical Connect (FEMA Region 5) — Milwaukee County OASIS has integrated cellular Long Term Evolution (LTE) services into the OASIS radio system core for enhanced interoperability beyond the limits of traditional radio frequency (RF). This project includes Next Generation portable radios, WiFi enabled mobile radios, LTE carrier devices

(WAVE application), and laptop dispatch consoles (WAVE Dispatch).

Milwaukee County participated in a test of interoperability on a national scale. The test included Milwaukee County (supporting with ISSI to WISCOM), Illinois, Michigan, Ohio, and Tennessee. This was the first test of its kind in the history of RF technology.

Advanced Cybersecurity — Cyber-attacks are quickly becoming one of the biggest threats to public safety and government agencies. As a benefit to our stakeholders, we have chosen to execute a cybersecurity contract with Motorola that provides an added layer of protection to our 911 PSAPs.

Siren System Upgrade — The Milwaukee County Emergency Alerting System upgraded its RF infrastructure. Serving all of Milwaukee County, including the most underserved communities, it was deemed necessary to integrate this system to the OASIS Countywide radio system. This upgrade provides new radio equipment at the siren sites and adds layers of stability to the emergency alerting system.

Integration of the City of Milwaukee to OASIS — The City of Milwaukee OpenSky is linked to the Countywide OASIS system through an Inter-RF Sub-System Interface (ISSI) gateway. Since the integration, we have seen a significant rise in interoperability within Fire services. All municipal fire radios have been reprogrammed to include City of Milwaukee Fire talkgroups for mutual aid to the

City of Milwaukee.

SUAll Upgrade — The Motorola System Upgrade Assurance (SUAll) contract allows for a full hardware and software refresh of the OASIS system every two years. Through careful planning, and assistance from system engineers, Core, radio site, and PSAPs were upgraded to the most current hardware and software revisions.

Network Security Upgrades — To ensure the integrity of the OASIS network and mitigate malicious attacks, OEM radio completed a remote security patching upgrade and a full-time network monitoring service. Phase 1 of the project was funded with FY22 OEM Radio operating funds, and Phase 2 will also be funded with FY23 OEM Radio operating funds.

Radio Site Security — Radio sites have been outfitted with LTE DVR Cameras, with motion sensing technology, to enhance site security and further mitigate risk.

MAJOR ACCOMPLISHMENTS

System Enhancement & Efficiency — The OASIS System sustained a 100% efficiency in 2022. We also increased our total push to talks by 2.8 million by integrating the City of Milwaukee ISSI and the Milwaukee Fire Department. ISSI has been stable for the entire year, and the new Fire template is a

critical resource to support interoperability within the Fire services.

Expanding Subscribers & Breaking Down Silos — The State of Wisconsin Department of Natural Resources, Wisconsin State Patrol, and Milwaukee FBT filed office are currently working through the programming process to become interoperable users in early 2023.

COMMUNITY ENGAGEMENT

- OASIS Governance Board.
- OASIS Technical Committee.
- OASIS Operational Committee.
- Cirrus Research Team.
- CISA SAFECOM Beta Testing.
- Interoperability Council.
- WISCOM Subcommittee.
- WI / IL Planning Committee.
- WI UAS Air Coordination Group (ACG).

AWARDS & HONORS

- Daniel Weber: High Performance Leadership Master Certificate.
- Harris Truno: Motorola Administration Certificate.
- Harris Truno: Motorola APX Programming Certificate.

MEDICAL DIRECTION

Dr. Ben Weston | Medical Director



2022 was an exciting year for OEM EMS Medical Direction, with focus shifting from pandemic related activities to strict EMS, as well as several exciting new directions. These projects ranged from maintaining the core quality improvement, education, and patient care roles within OEM, as well as pursuing several special projects and areas of focus related to system engagement, cross-agency collaboration, community transparency, and equity-based care.

SERVICE SUMMARY

The 2022 core medical direction team consisted of:

- Ben Weston MD, MPH—System Medical Director; Tom Engel, MD—Assistant Medical Director; Niko Arendovich—EMS Fellow; Brandon Drazich—EMS Fellow; Erin McGlynn—EMS Fellow; Nick Wleklinski—EMS Fellow.
- As always, MCW Division of EMS Medicine supports the team, particularly Lorin Browne, MD, who assists with research review and pediatric expertise, and Riccardo Colella, DO, MPH.

Outlined below are key areas for medical direction in 2022. While this list is far from comprehensive, it provides insight into several of the activities and achievements of the OEM Medical Direction Team.

Continuous Quality Improvement (CQI) — CQI is the cornerstone of a successful, patient centered, and safe EMS system. A total of 314 cases were individually reviewed for quality improvement and educational opportunities. 101 cases progressed to performance improvement reviews with one-

on-one meetings between medical directors and providers to discuss areas for quality improvement for a total of 25.25 hours of engagement time.

Education

- Continuing Medical Education: A total of 34 hours of continuing medical education was provided via OEM EMS to our providers.
- Monthly Podcast: Provides educational content that coordinates with quality initiatives to strengthen our system.
- Monthly Newsletter: A system wide newsletter highlighting system improvements, education, and quality improvement.
- Full Practice Simulations: 67 Full Practice virtual simulations were conducted with OEM educators and the Medical Direction Team.
- Simulation Training Sessions: 54 in person simulation sessions for a total of 162 hours of direct time were offered to providers to further hone their skills in patient contact and care.

CORE Team Support — The CORE Team was developed at the end of 2020 and expanded into more community engagement during the COVID pandemic. Initially focused only on special events, the CORE Team continues to expand into community-oriented trainings and messaging.

Online Medical Control — Online medical control is the process whereby physician guidance is available 24/7 to EMS providers via the radio. In 2022, 1,350 calls were fielded by physicians to provide medical oversight. These calls totaled 222

hours of physician time spent on online medical control calls and 77% are patients in medical and traumatic cardiac arrest.

Field Time — While available for medically or procedurally complex scene response when requested, we also work to schedule devoted time for field response to engage with EMS teams and providers. This on the ground experience allows us to liaise with providers, see the procedures, policies, and guidelines in action, provide on scene quality improvement, and real-time provider education. Our medical direction team was on scene for 236 patient encounters this year.

SPECIAL PROJECTS

Annual Guideline Revisions — Our patient care guidelines (PCG) were updated with the latest evidence-based practice to ensure the highest level of patient care.

Basic Life Support to Advanced Life Support — We have been working with the Fire Departments of Cudahy, Hales Corners, and St. Francis on their progression from Basic Life Support to Advanced Life Support agencies.

Incident Command & Active Shooter Coordination Efforts — In conjunction with the Milwaukee Fire Department and other partners, starting in 2022 we convened a meeting of law enforcement and fire agencies across the county to begin discussions on a unified IC and AS policy to better ensure safety and coordination.

Interfacility Transport (IFT) Unification — We worked with fire department leadership to ensure that all agencies are licensed with the state for IFT, a critical step in ensuring a full spectrum of community care.

Mobile Integrated Health Coordination — We have worked to better engage and support the departments that operate Mobile Integrated Health (MIH) as they work to improve the health of their community with upstream interventions.

New Product Review — Six new product reviews have been completed by the New Product Review

Subcommittee, which medical direction leads. These included Thorasite, Hemostatic Gauze, Battle Wrap, BD Interosseous Device, and Filter/End Tidal Combined Device reviews.

Urgent Care Coordination — Continued engagement with health system leaders surrounding EMS and Urgent Care interactions have been on going to provide process improvement steps and ensure quality of patient care.

RESEARCH & PUBLICATIONS

The Medical Direction team works hard to not only improve care of our citizens and visitors in Milwaukee County, but to disseminate that knowledge to impact and strengthen care far beyond our borders. Our Medical Direction team and EMS system is nationally recognized for excellence in both clinical care and also in research and sharing of best practices.

2022 research focused primarily in the areas of quality patient care, equity-based care, cardiac arrest improvement, and COVID interventions. Among ongoing research projects in our EMS system, select studies include:

- PediDOSE, a large, national, multicenter study was initiated in our system to investigate traditional weight-based dosing of midazolam for seizures in the pediatric population with age-based 3dosing.
- ZOLL BVM trial to optimize ventilation mechanics was initiated in our system and continues.
- Thorasite study to improve placement of needle thoracenteses was initiated and continues.

The below peer reviewed EMS related articles were among those accepted for publication:

- Schmicker RH, Blewer A, Lupton JR, Aufderheide TP, Wang HE, Idris AH, Aramendi E, Hagahmed MB, Traynor OT, Colella MR, Daya MR. The association of race with CPR quality following out-of-hospital cardiac arrest. Resuscitation. 2022 Jan;170:194-200.
- Weston BW, Swingen Z, Gramann S, and Pojar D: EVE Model: Evaluating Vulnerability and

For Second Time This Year, OEM Cardiac Arrest Response Saves Life

In early October, while the Office of Emergency Management (OEM) provided medical support services at a Friday evening event at the Milwaukee County Zoo, a middle-aged female patron collapsed from a medical episode, causing her to go into cardiac arrest.

Cardiac arrest is a condition where a person's heart stops beating effectively and does not pump blood throughout the body. Professionals from OEM'S Emergency Medical Services division (EMS), led by Captain Kurt Egner and Probationary Paramedic Kylie Sawtelle, rapidly recognized the symptoms and began resuscitation efforts, including chest compressions, airway management, administering medication, cardiac interpretation, and defibrillation, which shocks the heart with electricity.

After multiple shocks, the EMS team was successful in restoring the patient's normal heartbeat and managed her vital signs while the Wauwatosa and West Allis Fire Departments (coordinated by OEM Communications in the Milwaukee County 911 center) responded with additional resources. The West Allis medic unit ultimately transported the patient to the hospital in stable condition. She is expected to have a good outcome.

Nationally, the survival rate from suffering cardiac arrest is approximately 9%. This is the most time-sensitive emergency, one that requires rapid recognition and rapid intervention — typically from a bystander who recognizes the need for chest compressions and application of an AED.

Milwaukee County has a lower-than-average bystander intervention rate, which has become an area of focus for the EMS division. Locally, the entire EMS system in Milwaukee County encounters approximately 1,200 patients that are in cardiac arrest each year, or approximately four per day. This is the second time this year OEM has been involved in a successful resuscitation in the field.

EMS System Wins Gold, Again

The Milwaukee County Emergency Medical Services (EMS) System has been recognized for a seventh year in row for achieving the Mission Lifeline Gold Award from the American Heart Association. The award recognizes the local system of 15 EMS agencies in Milwaukee County for providing high-quality cardiovascular patient care.

"Heart attacks are not uncommon in the patients we encounter, and this award demonstrates our commitment to excellence and time-sensitive recognition, critical care and transport of these patients," EMS Director Dan Pojar said. "Our treatment guidelines are carefully crafted and designed to give patients the most up-to-date evidence-based clinical care in the pre-hospital setting as well as identify hospitals that are best prepared and equipped to receive and treat these patients. This would not be possible without strong partnerships between local health systems and Milwaukee County EMS."

Annually, the Milwaukee County EMS System performs more than 36,000 12-lead EKGs in the pre-hospital setting. An innovative local study in 1990 in partnership with the Medical College of Wisconsin demonstrated these EKGs enhance diagnostic diagnoses and care by making processes more efficient. The study improved outcomes for EMS systems worldwide.



Equity. American Journal of Public Health. 2022 Feb;112(2):220-222.

- Diaz R, Walker R, Lu K, Weston BW, Young N, Fumo N, Hilgeman B: The Relationship Between Adverse Childhood Experiences, the Frequency and Acuity of Emergency Department Utilization and Primary Care Engagement. Child Abuse & Neglect. 2022 Feb;124.
- Panichpisal K, Erpenbeck S, Vilar P, Babygirija RP, Singh M, Colella MR, Rovin RA. Stroke Network of Wisconsin (SNOW) Scale Predicts Large Vessel Occlusion Stroke in the Prehospital Setting. J Patient Cent Res Rev. 2022 Apr 18;9(2):108-116.
- Feldman R, Weston BW: Accidental Occupational Exposure to a Large Volume of Liquid Fentanyl on a Compromised Skin Barrier. Prehospital and Disaster Medicine. 2022 Aug;37(4):550-552.
- Angeli EL, Jezykowski J, Sinclair P, Grawey T, Poltrock JT, Weston B. Documenting Patient Interaction: Emergency Medical Services Report Reader Expectations and Improvements for Providers. Wisconsin Medical Journal. 2022 Dec;121(4):285-291.
- Gooley B, Weston B, Colella MR, Farkas A. Outcomes of law enforcement officer administered naloxone. Am J Emerg Med. 2022 Dec;62:25-29.
- Carlson JN, Colella MR, Daya MR, J De Maio V, Nawrocki P, Nikolla DA, Bosson N. Prehospital Cardiac Arrest Airway Management: An NAEMSP Position Statement and Resource Document. Prehosp Emerg Care. 2022;26(sup1):54-63.
- Nishijima D, Tancredi DJ, Adalgais KM, Chadha K, Chang TP, Harris MI, Leonard JC, Lerner EB, Linakis SW, Lowe GS, Magill CF, Schwartz HP, Shah MI, Browne LR. Impact of Race and Ethnicity on Emergency Medical Services Administration of Opioid Pain Medications for Injured Children. J Emerg Med. 2022; accepted for publication.
- Fishe J, Heintz H, Owusu-Ansah S, Schmucker K, Riney LC, Semenova O, Garvan G, Browne LR. Prehospital Pediatric Asthma Care During COVID-19: Changes to EMS Treatment

Protocols and Downstream Clinical Effects. Prehosp Emerg Care. 2022; accepted for publication.

The below listed items are invited national conference or lecture presentations:

- Weston BW. The 4 E's: Enhancing Safety in EMS Transports. Invited Lecture at University of Iowa Hospitals & Clinics Department of Emergency Medicine EMS Grand Rounds. Virtual. 6/2022.
- Weston BW. Strengthening Community Health: EMS Medical Director as County Health Advisor. Invited Oral Presentation at First There First Care Conference of the Metropolitan EMS Medical Directors Global Alliance, Ft. Lauderdale, FL. 6/2022.
- Weston BW. Valuing and Implementing Equity. Invited Oral Presentation at First There First Care Conference of the Metropolitan EMS Medical Directors Global Alliance, Ft. Lauderdale, FL. 6/2022.
- Weston BW and Swingen Z. Milwaukee County COVID-19 Dashboard: Balancing Approachable with Comprehensive. ESRI User Conference Annual Meeting. San Diego, CA. 7/2022.
- Weston BW. Achieving Health Equity: Through a Geographic Lens. ESRI User Conference Annual Meeting. San Diego, CA. 7/2022.
- Weston BW. Beckoning in Social Reckoning: Strategies to Ensure Better Equity in Patient Care. 2022 Craig Manifold Lectureship: Metropolitan EMS Medical Directors Global Alliance. Virtual. 12/2022.

The below listed items were accepted for presentation at national conferences:

- Engel T, Chinn M, Lamberton J, Weston BW. Outcomes of a Standardized Prehospital Verbal Trauma Handoff. Poster presentation at the National Association of Emergency Medical Services Physicians Annual Meeting. January 2022.
- Liu JM, Weston BW, Treat R. Effect of the COVID-19 Pandemic on EMS Operations. Poster presentation at the National Association of Emergency Medical Services Physicians Annual

Meeting. January 2022.

- Chinn M, Weston BW. Review of a Regional EMS Response Plan for COVID-19. Poster presentation at the National Association of Emergency Medical Services Physicians Annual Meeting. January 2022.
- Grover L, Chinn M, Weston BW. National Trends in Mental Health Related EMS Calls During the COVID-19 Pandemic. Poster presentation at the National Association of Emergency Medical Services Physicians Annual Meeting. January 2022.
- Engel T, Weston BW, Colella MR. Time Impact of Consolidated ECMO Receiving Centers for Refractory VF Patients. Poster presentation at the National Association of Emergency Medical Services Physicians Annual Meeting. January 2022.
- Leonard JC, Browne LR. Derivation of A Pediatric Cervical Spine Injury Decision Rule. American Academy of Pediatrics National Convention and Exhibition (Oral Presentation).

Anaheim, California October 2022.

The below listed non-peer reviewed articles were accepted for publication:

- Drazich B, Weston BW: What's the Buzz with Refractory Ventricular Fibrillation? Wisconsin Emergency Medical Services Association EMS Professionals Magazine. January-March 2022.
- Arendovich N, Weston BW: Blood Product Administration in the Pre-Hospital Setting. Wisconsin Emergency Medical Services Association EMS Professionals Magazine. April-June 2022.
- Chinn M, Weston BW: Prehospital Medication for Opioid Use Disorder. Wisconsin Emergency Medical Services Association EMS Professionals Magazine. July-September 2022.
- Wetjen S, Engel T, Weston BW: The H-Bombs of Traumatic Brain Injury. Wisconsin Emergency Medical Services Association EMS Professionals Magazine. October-December 2022.





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