

SUSSEX COUNTY EMERGENCY MEDICAL SERVICES



2023 ANNUAL REPORT

"Caring People. Quality Service"



INTRODUCTION

2023 Sussex County EMS Goals & Accomplishments

- Completion of the new EMS Administration and Education Complex.
- Relocation of EMS Administration, Logistics, and Education to the new complex
- Simulation program obtained accreditation by the Society for Simulation in Healthcare
- Maintaining a response ready fleet of vehicles
- Medic 111 (Milton) began night shift coverage ahead of anticipated schedule (August 2023 versus January 2024)
- Deployment of Medic 114 in Dewey Beach for a second summer season
- Deployment of Medic 109 as a daytime unit year round
- Implementation of a prehospital whole blood administration program
- Expansion of Employee Mental Health awareness and resources

Sussex County Emergency Medical Services (SCEMS) continued its tradition of excellence in pre-hospital care in a year with multiple achievements. A new modern training and administrative complex was completed. The new training and simulation facility was showcased during the site visit by accreditors from the Society for Simulation in Healthcare which resulted in SCEMS being the first EMS agency to receive this recognition. The SCEMS competition team once again brought home the gold medal from the annual JEMS Games. The American Heart Association again presented the GOLD Plus award to SCEMS for excellence in the care of cardiac and stroke patients.

Medic 114 returned to Dewey Beach for a second summer season to support EMS responses along the Route One corridor. Medic 109 began its summer day shift deployment with the intent to remain in service year-round. Our staff continues to be supervised by two District Supervisors and an administrator on call. Behind the scenes, all paramedics are supported by clerical, logistical, information systems, and administrative personnel to ensure a constant state of readiness.

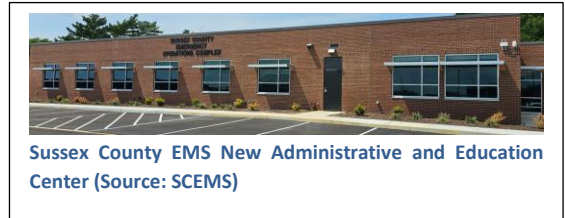
EMERGENCY OPERATIONS COMPLEX & EDUCATION CENTER



October 10, 2023- Ribbon Cutting Ceremony (Source: Sussex County)

Sussex County officials and other guests joined together Tuesday October 10, 2023, to cut the ribbon on a \$12 million expansion to the Sussex County Emergency Operations Complex near Georgetown. The facility, located at Delaware Coastal Airport, since 2008 has housed the County's 9-1-1 dispatch center and emergency management. With this nearly 20,000-square-foot addition to the newly minted Emergency Operations Complex (formerly Center), the County's Emergency Medical Services department joins their counterparts to create the first unified public safety complex.

The expansion, which began in the fall of 2021, nearly doubles the size of the operations complex, and will serve as the headquarters and training facility for the County's paramedics. In addition to office space for the administrative staff and the logistics warehouse, the addition has a focus on paramedic education and training. It features a state-of-the-art 50-person classroom, and five medical simulation rooms, including an ambulance simulator.



With a continued focus on employee wellness, the functional fitness analysis was reconfigured and revalidated to incorporate the new complex and new fitness center. This evaluation is used during pre-employment screening, biannual employee physical assessments, and return to work evaluations following injury or illness.

CLINICAL EXCELLENCE

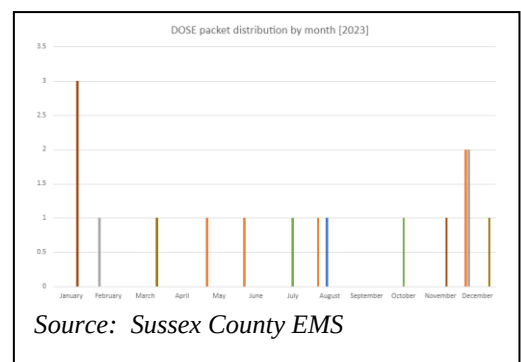
Whole Blood: In May of 2023, after nearly two years of hard work, Sussex County EMS proudly launched its prehospital low titer whole blood program. Since its implementation, more than 30 patients in Sussex County have received blood, with some requiring multiple units of blood products. Continuously striving for improvement, we are actively refining our strategies and best practices for the deployment and administration of this life-saving intervention.



Working collectively with the Delaware Office of EMS and the Blood Bank of Delmarva, we have leveraged collaborative efforts to enhance our program's effectiveness. In addition to our partnership, we have taken the initiative by hosting our own blood drives, further supporting our community's blood supply and reinforcing our commitment to saving lives through proactive measures.

COMMUNITY PROGRAMS

DOSE Program: The Sussex County EMS Direct On-Scene Education [DOSE] program continues to succeed in providing information to the frontlines during patient and paramedic interaction. The program aims to provide resources to individuals and families that have infants under the age of one in their care. Through direct interactions with on-scene Paramedics, crews are able to establish rapport with caretakers and bring a positive influence into their home through safe-sleeping education and resource access. Since 2015, SCEMS has provided 223 families with direct on-scene education



and resource packets, seventeen of which were provided in 2023. A total of eight cribs have been provided to infants found in critical need of a safe-sleeping space. SCEMS also continues to provide educational updates to both new and tenured paramedics to ensure that all opportunities for sleep-related trauma prevention are utilized. The success of the program is observed through

first-responder interaction and education with the public and providing access to resources for those with infants in their care.

Narcan Leave Behind Program: The Delaware Opioid Rescue Kit program remains an important effort to put lifesaving therapy into the hands of vulnerable populations. The rescue kits are distributed in situations where a patient has been treated with naloxone but refuses transport to a hospital. These cases pose particular risk of relapse or recurrent respiratory depression.

In such cases, Sussex County Paramedics offer a Delaware Office of Emergency Medical Services supplied opioid rescue kit to the patient, their friends, or family members remaining on scene. Kits contain two doses of intranasal naloxone, an antidote to opioid exposure. Also inside each kit are instructions to provide additional patient care until the arrival of trained rescuers as well as additional information on drug abuse counseling and rehabilitation services.

Sussex County Paramedics have been participating in this important initiative since 2021. Each year has seen an increase in the number of rescue kits distributed and individuals trained by our paramedics. In 2023, 172 kits were distributed, and 269 citizens were trained to manage an overdose.

PERSONNEL

Staffing: SCEMS entered 2023 with six vacancies. Thirteen (13) new paramedics were hired throughout the year. SCEMS ended the year with one vacancy. Five employees separated from the department throughout the year. 2023 concluded with five employees having more than 25 years of service and are eligible for retirement. SCEMS appreciated an attrition rate of about 4% while the EMS industry of ten sees an annual rate of 20-30%.

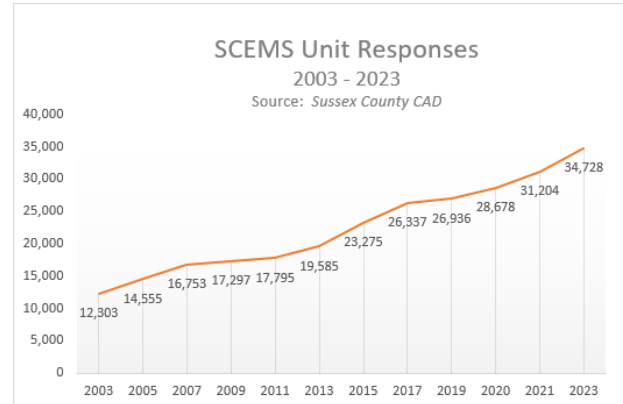
In addition to the paramedic candidates, SCEMS also brought on board five paramedic students. These students joined the department at different stages of their Delaware Technical and Community College paramedic program. Currently, three of these students have successfully attained paramedic credentials, while two students are still in the final phases of their paramedic training.

Employee Wellness: Employee mental health, wellness and resiliency remained a priority during 2023. Starting this year, all employees attend an appointment with a mental health professional as part of the biennial medical evaluation process. This provider in consultation with our occupational health medical provider will determine an employee's fitness for duty. As appropriate, the provider may be involved in return-to-work decisions.

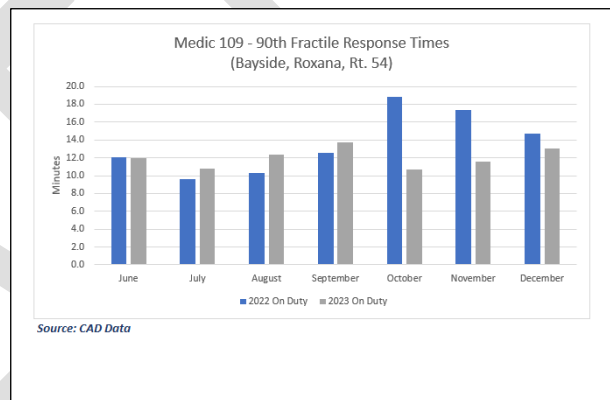
2023 INCIDENTS

For 2023, SCEMS experienced a 2% increase in response volume compared to last year. Over the past ten years, a 77% increase in unit responses has been appreciated. This demand has continued to be met with eleven paramedic units, including two single medic 24-hour stations in Bridgeville and Milton, and a full-time day shift only single medic in the Roxana area. For the second year, these full-time units were supported by a summertime "power unit" in Dewey Beach to help address the call volume and difficulty navigating the Route 1 corridor between Memorial Day and Labor Day.

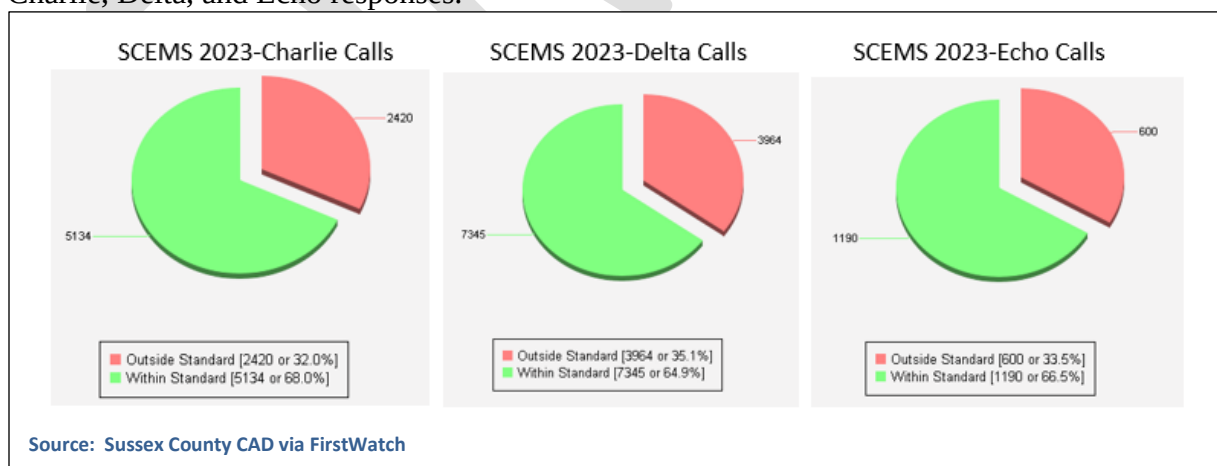
2023 Incident Responses		Δ Last Year
EMS 100 (Eastern Supervisor)	1,409	22%
EMS 200 (Western Supervisor)	1,260	18%
Medic 101 (Lincoln)	3,163	2%
Medic 102 (Laurel)	2,780	0%
Medic 103 (Dagsboro)	3,521	-3%
Medic 104 (Lewes)	4,449	-4%
Medic 105 (Millville)	2,609	0%
Medic 106 (Long Neck)	3,390	-4%
Medic 107 (Bridgeville)	1,550	1%
Medic 108 (Georgetown)	3,098	0%
Medic 109 (Roxana Day Shift Unit)	794	108%
Medic 110 (Seaford)	4,023	-2%
Medic 111 (Milton "Power Unit")	1,658	24%
Medic 114 (Dewey "Power Unit")	534	-3%
Special Operations	220	-6%
Other (Administration)	270	21%
Total	34,728	2%
Incident Responses by Unit (Source: Sussex County CAD)		



Medic 109: This traditional summer power unit was again placed in service over the busy summer months. In 2023, Medic 109 transitioned over to a full-time day shift unit stationed in the Southeastern portion of Sussex County along Lighthouse Road in Roxana. Medic 109 provides a valuable resource to an area that continues to grow and expand. Medic 109's response volume increased as expected with the year-round deployment.



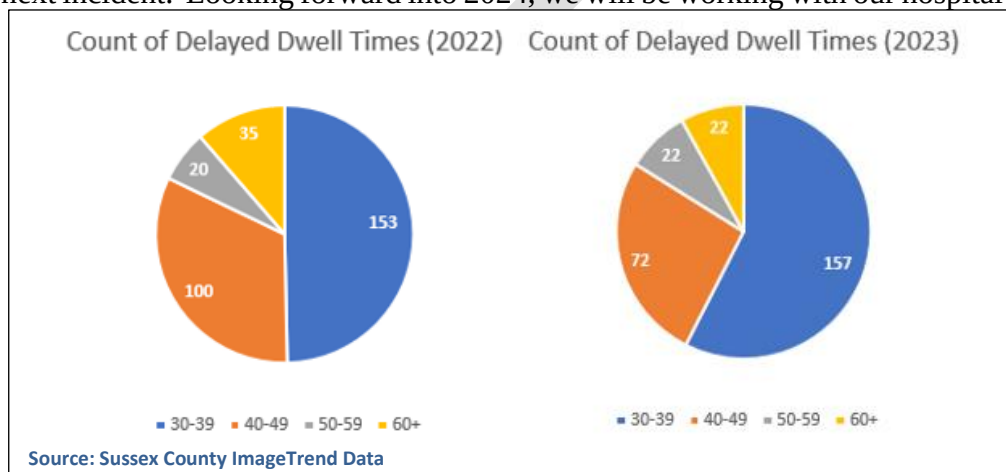
Response Times: Meeting the goal of an 8-minute response time continues to be a challenge in Sussex County. Our geography continues to be the greatest barrier. While response times are evaluated based on EMD code, compliance with an 8-minute standard is consistent between Charlie, Delta, and Echo responses.



Our Patients: Sussex County continued to welcome visitors throughout the year, approximately 9.1% of our patients for 2023 resided outside of Sussex County. This represents an increase of 2.2% from 2022. The increase in out-of-county residents is not surprising, considering the increased response volume.

Dwell Times: An ongoing issue in Sussex County is the time it takes to transfer patient care to hospital staff after a patient arrives to the emergency department. This has been termed our Dwell Time. Hospitals often refer to this as *wall time*. In 2023, SCEMS arrived at a local hospital with a patient 16,106 times. Our dwell times vary due to a multitude of factors, with most patients being transferred in under twenty minutes. However, we did experience 273 times that required a unit to be at a hospital for greater than 30 minutes to facilitate a transfer of care. In twenty-two cases, a SCEMS unit had a dwell time exceeding one hour.

The dwell time issue really began during the COVID pandemic when hospitals were at maximum capacity. The challenge today is that when EMS is busy, hospitals are also busy. However, our paramedics need to transfer care in a reasonable timeframe so that they may return to service and be available for the next incident. Looking forward into 2024, we will be working with our hospital partners and the Office of EMS to develop a plan to allow for a transfer of care to take place in a safe but non-traditional manner while ensuring the needs of the patient are met.



AWARDS

SSH Accreditation: As a leader in prehospital medicine, SCEMS made history in 2023 by achieving the long, sought-after goal of accrediting its simulation and education programs. As the first EMS agency in the world to achieve this full accreditation through the Society for Simulation in Healthcare (SSH), the SCEMS simulation team and field training officer programs demonstrated that they either met or exceeded international standards in simulation, teaching, and education.



The simulation program formally began in 2008 and the accreditation process was initiated in 2018. The process was overseen by the quality and standards division and involved many tasks such as: formal documentation, data collection, assembly of our new simulation labs, presentation preparations, confirmation of standards, and an arduous one-day site evaluation involving multiple facets of leadership within Sussex County government. Witnessing a five-year project and long-term goal come to fruition has been exciting and humbling for the now dual accredited department while confirming the great work that our paramedics do every day.



SCEMS Competition Team in action at the 2023 JEMS Games (Source: SCEMS).

JEMS Games: The SCEMS competition team returned to the stage at the 2023 FDIC JEMS Games in Indianapolis, IN. After successfully finishing among the top three teams in the preliminary competition, the SCEMS team advanced to the final round of the games. The final scenario presented a realistic scenario that challenged the teams with multiple patients with various injuries following a vehicle accident. SCEMS paramedics finished in a well-earned first place following a solid performance and providing quality care to all patients.

SPECIAL OPERATIONS

Special Operations: Throughout 2023, SCEMS continued to provide ALS coverage for mass gathering events, Presidential visits, and public educational opportunities. The 220 events were covered by more than 120 medics totaling more than 2,100 personnel hours. The SCEMS active assailant committee members were part of a statewide cadre that taught the Active Assailant Integrated Response (AAIR) course to emergency responders throughout the state. The hazmat team had four responses including a six-hour sand bin rescue in Dagsboro. SCEMS assisted in developing and participated in the DEMA sponsored Sea Witch Festival tabletop exercise.



SCEMS bike medics on a training exercise. Source: SCEMS

EDUCATION AND QUALITY MANAGEMENT

Continuous Quality Improvement (CQI): The SCEMS CQI program remains a robust process and a contributing factor to our clinical success. The process is demanding, time consuming, and incredibly valuable to the quality of care delivered by SCEMS paramedics. Just as we are continuously improving our care, we are improving the CQI process. The addition of FirstPass in the CQI process will help improve the overall program effectiveness. FirstPass will conduct an initial automated review of all patient care reports and then route them to the appropriate next level of review. The system also provides near real time alerts to critical calls or procedures performed.

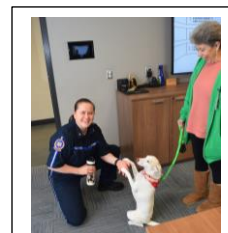
Continuing Education: Education remains the foundation for the care provided by SCEMS. The year started off with scenario-based recertification in Pediatric Advanced Life Support (PALS) and Basic Cardiac Life Support (BCLS) which incorporated simulation-based scenarios allowing for realistic learning. We welcomed Dr. Carol from Cooper Medical Center in New Jersey for a presentation on Buprenorphine and its impact on his EMS system. This provided our staff with an increased awareness and introductory education to our newest medication and entry pathway for opioid addiction.



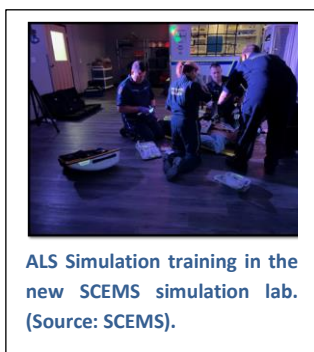
Continuing Education in the new EMS Classroom. (Source: SCEMS)

October was a joint session with paramedics from all three counties and the Delaware State Police Aviation division. The morning featured EMS medical directors from across the state in an organized expert “panel of blue hens” where they addressed provider concerns, highlighted clinical initiatives, and provided lectures on topics requested by Delaware’s paramedics. The afternoon was led by guest speaker, Dr. Melissa Kohn from Thomas Jefferson University. Dr. Kohn spoke on her experiences during the Boston marathon bombing and the Philadelphia train car derailment.

Paws for People: During each Con Ed day, SCEMS welcomes several visitors from the Paws for People program. The pups make their rounds visiting paramedics and dispatchers. Looking at the smiles on faces and wagging of tails, it is hard to tell who is happier- the medics or the dogs! This program has been well received and has been a high point of the day and contributes to employee happiness.



Paws for People
visiting the SCEMS
education complex
(Source: SCEMS).



ALS Simulation training in the
new SCEMS simulation lab.
(Source: SCEMS).

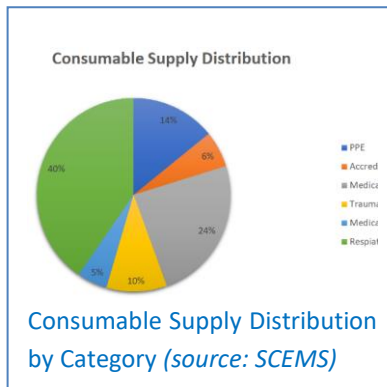
Simulation Program: Leading up the accreditation site visit, the simulation team was busy offering training and education sessions to both ALS and BLS providers. Throughout the year, the simulation program was incorporated into employee interviews, new employee training academies and credentialing, airway education, BLS education, committee training, and so much more. As SCEMS looks to update transport ventilators, simulation will be the first step in the evaluation process.

LOGISTICS AND CAPITAL IMPROVEMENT

Logistics: SCEMS continues to be supported by a five-person Logistics Division that oversees and coordinates station, equipment, vehicle purchasing, maintenance, and employee uniforms. In 2023, they handled 2472 requests for service and repairs. Additionally, our Logistics Division purchased, processed, and distributed 42,392 requests for consumable medical supplies. This represents a 49% decrease compared to 2022 utilization. This has been attributed to the normalization of PPE consumable supplies post COVID.

Response Ready Fleet: One ALS response Suburban and one pickup truck for the Logistics Division was placed in service. Our fleet drove 588, 000 miles, a 9.5 % increase using 45,891 gallons of fuel for an average of 12.82 miles per gallon.

Paramedic Station Updates: No new paramedic stations were built in 2023. As previously noted, the focus for the year was on the new administrative and education complex. Looking forward to 2024, construction of a new Medic 103 station in Millsboro is anticipated to begin in early 2024. Future construction plans are in the works for Medic 101 in Lincoln and Medic 111 in Milton. Sussex County has entered into an agreement to support housing a seasonal paramedic unit within the planned Dewey Beach municipal complex.



SUMMARY AND A LOOK AT 2024 GOALS

This past year was a milestone year for Sussex County EMS. We moved into a new, state of the art education and administrative complex. We began a pre-hospital whole blood program. Our simulation team achieved a level of accreditation that no other EMS system has accomplished. The year also presented challenges. Our EMS system has been busy. Hospitals have been busy. This has led to extended delays in transferring care in the emergency department. As a result, ALS crews have been delayed getting back in service and available for the next call. Looking into next year, this will be an area of focus as we need to ensure optimal readiness to meet the needs of Sussex County residents and visitors.

All SCEMS activities are completed with our motto of “Caring People, Quality Service” in mind. As we look towards 2024, SCEMS will be looking to update some of the equipment that is used every day. Progress towards a new Medic 103 station should be substantially completed by the end of next year. A new home for Medic 114 in Dewey Beach will begin as the town begins construction of a new town hall and police station. Plans for new Medic 101 (Lincoln) and Medic 111 (Milton) stations will follow.

2024 Goals and Initiatives

- Begin construction of a new Medic 103 station in Millsboro with a completion goal of January 2025
- Address the challenges of extended transfer of care and emergency department dwell times
- Review options for prehospital ventilators to replace those currently in use
- Review options for new cardiac monitors to replace those currently in use
- Maintain a response ready fleet
- Continuation of the paramedic student program to augment the hiring of out of state paramedics
- Continue our focus on employee health, wellness, and resiliency
- Identify property for a Medic 109 station in the Roxana areas
- Maximize opportunities with FirstWatch and FirstPass to enhance the quality improvement process

Education Coordinator Year End Summary Report **2023**

SUMMARY

From becoming the first EMS agency in the world to be SSH accredited to providing quality hands on simulation training during continuing education sessions, 2023 was a busy year for education.

This report will serve to discuss a summary of the work completed by the Quality and Standards Division specific to the team involved with the work delegated to the responsibilities of the Education Coordinator.



MONTHLY CONTINUING EDUCATION

JANUARY - MAY

2023 began with scenario-based recertification during January's PALS and BCLS AHA renewal. February, guest speaker Dr. Carrol from New Jersey presented on Buprenorphine and its impact on his EMS system to provide our staff with increased knowledge on our newest medication and entry pathway for opioid addiction. During March's Con Ed, our staff reviewed annual infection control, completed N95 fit testing, and renewed their NAEMT Safety course certificates with the new 3rd edition content. April and May witnessed our annual EVOC renewal as well as presentations on honor guard and active assailant during MCI's.

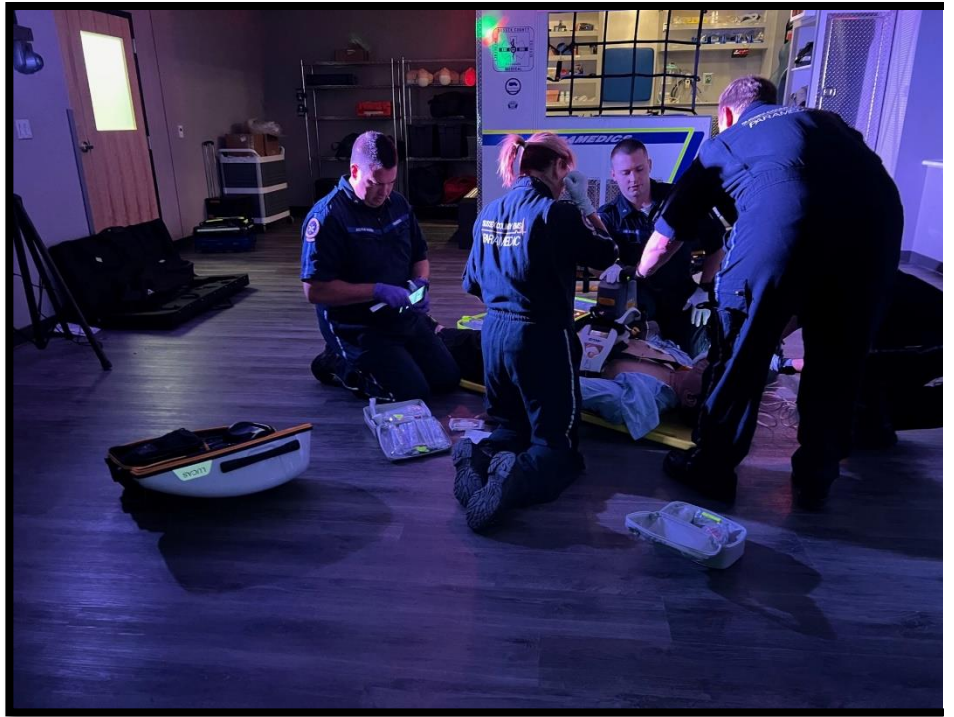
SEPTEMBER - NOVEMBER

ACLS renewal occurred in September where staff was challenged with 5 high fidelity cardiac arrest simulations. November culminated the last two years of content into a station rounding experience where teams competed for points in scenarios involving pharmacology administration, skills assessments, aviation safety, protocols, and a high fidelity simulation involving a house fire with entrapment.

2ND STATEWIDE CON ED

During October's continuing education sessions, all 911 paramedics from across the state, from all 3 counties and DSP attended the second Delaware State Con Ed in a row. This training was planned a year in advance by the educators from New Castle, Kent, Sussex, and DSP. The morning portion featured medical directors from across the state in an organized "panel of blue hens" where they addressed provider concerns, highlighted clinical initiatives, and provided expert lectures on topics requested by providers. The afternoon portion was conducted by our guest speaker, Dr. Melissa Kohn from Thomas Jefferson University. Dr. Kohn spoke her on experiences during the Boston bombing and the Philadelphia train car derailment. She also conducted review regarding MCI best practices, pediatric trauma management, and focused areas in mass casualty care.







2023 Team Goals

- Apply for Accreditation ✓
- 75% department participation ✓
- Organization of new Sim Center ✓



Credentialing Evaluation Interviews

- 5 interview sessions
- 5 credentialing sessions



2023 Member Opportunities

- Budgeting provided for 2 individuals to attend IMSH
- Task trainer equipment updated

SIMULATION

BENCHMARKING

Between 2022 and 2023, we were able to achieve a 100% completion of at least one simulation session for all paramedics within their evaluation year (for those that were eligible) witnessing 101 paramedic completing simulation. Our 3 scenarios for 2023 provided 6 new benchmarks that were applied in the Fall of 2022 and were evaluated until December of 2023. These 6 benchmarks included:

- *Hemorrhage control and shock* (repeated 29 times)
 - Was hemorrhage controlled within 2 minutes?
Results: 87% were successful who attempted.
 - Was a pelvic binder applied within 4 minutes?
Results: 74% of participants provided fluid
- *Unstable STEMI* (repeated 27 times)
 - Cardioversion within 2 minutes of presentation?
Results: 90% recognized the decompensating patient.
 - Early Twiage of STEMI?
Results: 75% decompressed
- *Pediatric seizure w/ DFI* (repeated 22 times)
 - Used correct doses from Handtevy?
Results: 83% moved towards vagal maneuvers early.
 - 1st pass intubation?
Results: 100% correctly performed cardioversion.

These scenarios were provided to 86 participants from September of 2022 until November of 2023..

SSH ACCREDITATION

The first few months of 2023 were busy as the members of the simulation team not only prepared for the application and onsite visit, but also prepared the new PMO simulation labs. The onsite visit was well received.

THE FUTURE

2023 witnessed the end and beginning of an era for the simulation team as they achieved SSH accreditation. From overwhelming department and county support to agency incorporation beyond benchmarking and high-fidelity simulations with simulation now being used for: interviews, credentialing, employee academies, airway education, BLS education,

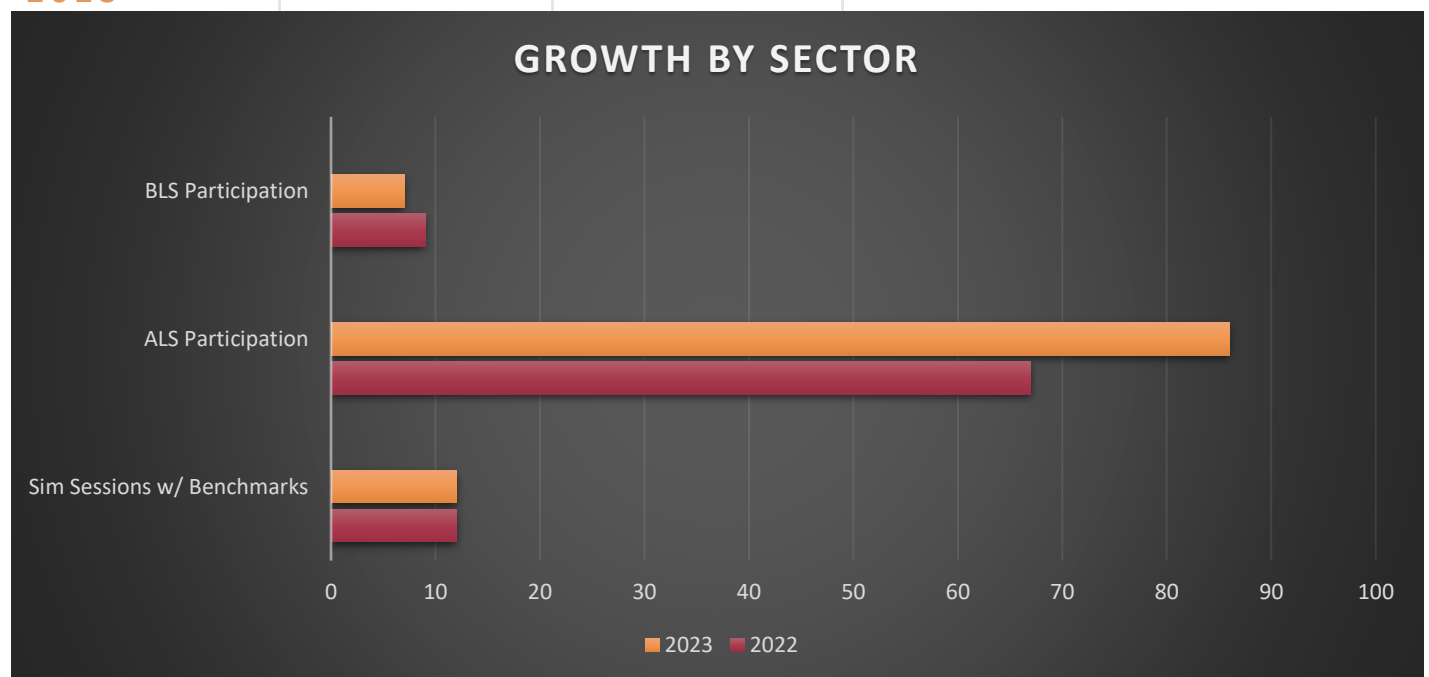
hospital and college campus support, other committee training, and so much more. 2024 will bring our team a new year of continuing to become accustomed to their new simulation center as well as the challenge of where the teams vision lies in the future beyond 2030.



SIM PARTICIPATION COMPARED 2021 VS. 2022

Noted below is a consistent increase in our participation with the number of benchmarked scenarios ran between 2022 and 2023. Of our ALS participation between the two years, when individually averaged out, each eligible paramedic for simulation participated in a session within their evaluation period (which can fall between years). This presents us with a picture of us having 100% participation in high fidelity benchmarked simulation sessions within our department. A long-term goal that we have met two years in a row.

	Sim Sessions w/ Benchmarks	ALS Participation	BLS Participation
2022	12	67	9
2023	12	86	7





WHAT ELSE?

“The realism, time put into the training, and dedication of the team makes the training day worth it” – Anonymous Survey Result

AHA: We continue to train our staff and the public as a training site providing ACLS (21 classes), BCLS (27 classes), Heart saver (7 classes), and PALS (8 classes) courses.

NAEMT: All of our providers recertified their Safety course cards in March of 2023.

College Tuition: During 2022 we had 18 submissions for college tuition reimbursement which works to provide our staff with the ability for financial and career advancement by providing tuition assistance towards the individuals college incentives if their courses are pre-approved by the EC.

NFA: 2 individuals attended the NFA in 2023 for courses in Hazmat and EMS leadership.

CORE: In terms of recruitment, the CORE team held 4 virtual recruitment sessions and traveled to 5 colleges.

Conferences: In 2023 SCEMS covered 14 individuals to attend different conferences across the US. At each of these conferences, employees were tasked with bringing back new educational or department advances to present or implement (many of which did).

Cornerstone: During 2023, there were 73 trainings deployed via the LMS to our users with a documented 4,282 completion of tasks.