



Category 5F Emergency Medical Service

Summary

The Fire Department is responsible for providing the Village of Elk Grove with pre-hospital emergency medical care starting with basic life support to advance life support level. The Department has provided emergency medical services to the citizens of the Village since the 1950's, with Advanced Life Support and our first Paramedic service starting in the 1970's.

Emergency Medical Service is foremost the leading emergency response service need by our community. Paramedic (EMT-P) and Emergency Medical Technicians (EMT-B) serve on the front lines of mitigating medical, behavioral, and an ever increasing needed chemical addiction response. The Department has fully integrated Emergency Medical Service training with fire suppression training, preparing personnel to respond to medical responses while being as capable and trained to respond to fire suppression and rescue incidents.

Training, tactics & strategy, and organizational principles are consistently evaluated to keep our organization's Emergency Medical Services response addressing the vast needs of our community.

In 2020, the Elk Grove Village responded to 3809 total EMS calls. This accounted for 71% of all calls. The Department provides its EMS services under the Northwest Community Emergency Medical Service System (NWCEMSS), led by Medical Director, Dr. Mathew Jordan. The Department continues to work well with the EMS system including Alexian Brothers Medical Center, located in the Village of Elk Grove.

The Department performs under the medical direction of the Northwest Community EMS System (NWCEMSS) but fully provides input in developing policies and protocols that insure a high quality care is delivered to our community. Protocols are in accordance with State EMS Region IX and the Illinois Department of Public Health (IDPH).

COVID-19 (Corona-Virus 2019) pandemic continued from 2019 throughout 2020, affecting many areas and levels of the Department's Emergency Medical Services. COVID-19 created many medical challenges for the community, the Department's pre-hospital EMS responses, and on scene care and transport. COVID-19 also changed how our main receiving hospital (Alexian Brothers Medical Center) conducted intake and triage of suspected COVID patients or patients under investigation (PUI) for having COVID due to their symptoms.

The Fire Department continued to provide peer input for EMS System challenges and suggestions for improved quality of care. Direct feedback on the Department's level of care is provided via monthly and yearly QI/QA data reports. The process of reviewing quality of care provided to our patients is handled through many of the EMS Systems standard of practice Committees and Boards. These EMS System committees



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conducted less live meetings in 2020, but adjusted with meetings via video conferencing due to COVID. The Department has representation on the Advisory Board, Education Committee, Computer Aided Reporting System (CARS) Committee, Provider Based Performance Improvement Committee (PBPI), Research & Development Committee (R&D), EMS Coordinators Committee (Fire Department EMS Chief), and the (Fire) Chiefs/Administrators Committee. All committees are schedule to meet monthly or every other month.

The Department delivers emergency medical care to our citizens using three Advanced Life Support (ALS) Ambulances, two ALS Engine Companies, two ALS Quints, and one ALS Squad Company. The Department also has three ALS Ambulances in reserve, with one additional Ambulance put in service when manpower permits. This includes assigning an additional Ambulance to support special events.

In 2020, once again the Department's EMS budget contained funds to staff a 4th Ambulance, but due to concerns that the Village would see a decrease sales tax receipts in the next budget year due to COVID, the 4th Ambulance program was reduced from the initial Monday through Friday, 8:30 to 5:00pm staffing hours. The 4th Ambulance was only staffed when shift personnel levels carried the additional manpower or staffed to supplement shift training and still provide an additional available Ambulance to respond to EMS calls. If overall budget finance levels demonstrate strong incoming funding for the Village and stable overtime expenditures for the Fire Department, it is expected that the 4th Ambulance program hours and days will increase if possible.

The initially purpose of the 4th Ambulance program was to improve EMS responses during the time SOC and yearly response data demonstrated that the 8am to 5pm, Mon-Fri time frame, were the times of the Department's biggest EMS call volume. This program started in May of 2019 and continued until December 2019 when funding ran out. The program was reviewed for improvement and for better funding sustainment and was put in the 2020 – 2021 budget.

The Department's response districts have the City divided into four response zones with defined areas that includes residential, industrial and mixed response districts, fire districts 7, 8, 9 and 10. Along with an Ambulance, an ALS suppression company is also dispatched to provide additional manpower and equipment to the scene of an EMS response. If additional ambulances are needed for a response beyond the Department's capabilities, mutual aid agreements are in place to provide them.

The current EMS program offered by the department is appropriate and works well in most areas of service delivery. After a decrease in 2018 and 2019 we also saw a decrease in the number of patients having Return of Spontaneous Circulation (ROSC) in 2020. The decrease in ROSC can easily be traced to the decrease in overall EMS calls starting in 2019 into 2020 (due to COVID) and a decrease in cardiac arrest calls (See the Outcome Metric: *Cardiac Arrest Patients with Return of Spontaneous Circulation* table below in the document).



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A review of QI/QA EMS response data bears out service delivery is still at high levels put patients with high morbidity increased. We still continue to seek improvement and the Department continues to monitor its medical program to ensure the delivery of quality services to our citizens in all areas.

Additional Emergency Medical Services in the area of Mobil Integrated Health care (MIH) conceived prior to 2019 by the Department's EMS system (NWCEMSS) was once again put on hold due; this time due to COVID-19. Community partnerships with our hospital and social service's resources continued to be cultivated to address additional medical and social service needs of the community.

In 2020 'Active Threat/Mass Casualty' events discussions meetings between the Police Department and Fire Department were reduced. These meetings further ensure policy coordination in our response to Active Shooter Hostile Events (ASHE). The main reason for the reduction of these meetings were due to the Police and Fire Department administrative staff addressing COVID-19 response and mitigation within their departments and the Village overall.

Department COVID-19 response, mitigation and preparedness included ensuring emergency responders and support staff were up to date and followed ever changing and continued guidance from authorities such as the CDC and IDPH (Illinois Department of Public Health). Establishing pre-screening and work screening policies to keep staff safe from individual and mass crew infections from COVID-19. Establishing Department guidelines in wearing, donning and doffing of PPE per CDC, IDPH and EMS System guidelines. The Department continued to procure and purchase needed PPE and continued to stock enough PPE (Surgical masks, N95 masks, face shields, gloves, disinfectant wipes, etc.) to supply the Department for a full year.

The Department has (75) Paramedics, (12) EMT-B's and (1) First Responder, all certified through the State of Illinois, IDPH (Illinois Department of Health). In 2019, all ALS and BLS vehicles passed IDPH and EMS System's equipment and vehicle inspections, all Department personnel completed their yearly continuing education requirements.

2020 EMS Committees/Boards Highlights

Advisory Board:

Establishment of COVID policies and COVID SOP's (Advisory Board review only if need determined by the EMS System Director). COVID-19 Policies, SOPs, System Memo's and a continually updated 'EMS Playbook' that addressed COVID-19 precautions, response, treatment, transport decisions and refusals.

PBPI:

Review of 2019 Data; 2019 End Data Review: Primary Impressions (chest pain, stroke, etc.), Medications Given (Fentanyl, Narcan, Ketamine, etc.), Procedures Performed (I.V., I.O, CPR, etc.) Response times (en-route, to the scene, transport time, etc.).



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Education Committee:

COVID adjustment for Paramedic Class education (stopping department field ride time for a period), in-station continuing education (conduction video instructor led classes via Zoom).

CARS Committee:

Image trend PCR Software updates and improvements; creating a COVID-19 Pre-Screening tool in Imagetrend, reducing the need for leaving paper reports at a hospital, but being able to digitally leave a patient report.

R & D Committee:

Review of a Sapphire infusion pump for Norepinephrine admiration.

EMS incidents decreased from 4158 in 2019 to 3809 in 2020, which is a decrease by 9% percent. The decrease in calls on 2020 can be attributed to COVID-19 fears by residents who would have normally called 911 but may not wanted to go to a local hospital. EMS calls continues to be (71%) of the Department's response in 2020.

Emergency Medical Responses (includes Auto/Mutual Aid)

EMS Incident Type	2016	2017	2018	2019	2020	Total
3001 Medical Alert-False Activation	N/A	N/A	N/A	N/A	29	29
3002 Check on Well Being – No patient	N/A	N/A	N/A	N/A	3	3
3003 EMS Call, No patient contact	N/A	N/A	N/A	N/A	18	18
311 Medical assist, assist EMS crew	20	10	8	16	6	60
3111 Medical assist, investigate only – no treatment	40	25	45	50	0	183
320 Emergency medical service, other	18	14	9	17	10	68
321 EMS call, excluding vehicle accident with injury	3,388	3,559	3,786	3,698	3,403	17,834
322 Motor vehicle accident with injuries	283	263	241	228	168	1,183
3222 Accident involving bicycle	N/A	N/A	N/A	N/A	5	5
3223 Accident involving motorcycle	N/A	N/A	N/A	N/A	3	3
323 Motor vehicle/pedestrian accident (MV Ped)	12	13	15	14	7	61
324 Motor Vehicle Accident with no injuries	49	46	43	33	23	194
371 Electrocution or potential electrocution	0	0	0	0	1	1
381 Rescue or EMS standby	7	4	2	2	0	15
554 Assist invalid	58	65	108	100	133	464
661 EMS call, party transported by non-fire agency	4	1	1	0	0	6
Total	3,879	4,000	4,258	4,158	3,809	20,104



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Operational Performance

EMS All Area 90th Percentile Times Baseline Performance			Bench- mark	2016- 2020	2016	2017	2018	2019	2020
Alarm Handling	Pick-up to Dispatch	Urban	1:30	2:33	1:15	1:21	2:45	2:46	2:53
Turnout Time	Turnout Time 1st Unit	Urban	1:50	2:05	2:02	2:04	2:09	2:03	2:07
Travel	Travel Time 1st Unit/ERF Distribution	Urban	4:15	4:34	4:22	4:23	4:35	4:47	4:39
Time	Travel Time ERF Concentration	Urban	4:15	5:40	5:33	5:27	5:39	5:43	6:07
Total Response Time	Total Response Time 1st Unit/ Distribution	Urban	7:35	7:35	6:51	6:50	8:11	8:16	8:23
				n=19,640	n=3,764	n=3,881	n=4,170	n=4,089	n=3,736
	Total Response Time ERF Concentration	Urban	7:35	9:04	8:25	8:24	9:36	8:49	11:08

Per the Community Risk Assessment Standards of Cover completed in 2020, a review of our EMS response times in 2019, from 'alarm handling' to 'at the hospital' total response times (1st Unit) averaged 8:49 minutes, which was .19 sec. above the 8.30 benchmark. The Department continues to work on all areas of improving response times including an introduction of a new CAD (Computer Aided Dispatch) program in 2020.

Outcome Metrics

Cardiac Arrest Patients with Return of Spontaneous Circulation		
Year	Percent with ROSC	Total Patients w/CPR Started
2015	46%	36
2016	48%	21
2017	54%	37
2018	51%	27
2019	42%	43
2020	29%	35



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Return of Spontaneous Circulation (ROSC) rates: Defined as the percentages of calls where a patient had a return of spontaneous circulation, this includes return of breathing, and a pulse. - After a drop in 2018, ROSC rates also decreased in 2019 as total patients needing CPR increased. In 2020, the number of cardiac patients decreased (possible due to COVID) and the percentage of the department's success rate in ROSC decreased. The Department expects with the continued protocol of sending additional response vehicles and manpower to full arrest calls and the use LUCAS mechanical CPR devices (3), the Department seeks to continue to work at improving ROSC rates.

Opioid Overdose Calls			
Year	Possible Over Dose Patients	Number Given Narcan	Narcan Saves
2015	10	2	20%
2016	18	2	11%
2017	17	17	100%
2018	20	18	90%
2019	21	21*	86%
2020	18	18	100%

Opioid Overdose Calls and Narcan Administration: Defined as the number of calls received and determined to be overdose patients due to opioids, the number of patients given Narcan (Naloxone), and the percentage of patients revived (saves) by the administration of the drug, Narcan. - The EMS System and the Department use QI/QA data to track opioid overdoses in our Village and the overall area covered by the EMS System. QI/QA data from years past initially showed the department Paramedics were lacking in administering Narcan to treated opioid overdosed patients. This was addressed, improvement in 'saves' has increased, including into the year 2020, were 100% of opioid overdose patient were given Narcan and 100% were saved. This will be continued to be tracked into the next year.

Strategic Plan Goals and Objectives

The EMS Department establishes yearly goals and performance improvement measures. Going forward the EMS Departments specific Strategic Plan Goals and Objectives will formulate our needs, requests, performance measures and budget requests under a Strategic Plan.

New Strategic Plan Goals and Objectives

Goal 1: Continued improvement of patients with Returned of Spontaneous Circulation (ROSC) rates, including improving Neurological functions of those patients who are successfully discharged from the hospital. In 2020 the Department continued to be one of three departments to participate in a trial in the use of the EleGard 'Heads Up' CPR device that incrementally raises the patient's head every two minutes during CPR, which has shown to improve patient neurological outcomes. For at least 4



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months in 2020, due to COVID-19 precautions the devices were removed from the Ambulances. We re-deployed the EleGard devices in late 2020, back on the Ambulances after a short equipment review. The whole department received a full refresher from the device training rep, which included new deployment techniques and data from other EMS system that have deployed the devices.

Objective: Increase ROSC rates with additional personnel responding on cardiac arrest response, additional purchases of LUCAS mechanical CPR devices, and continued participation in a trail conducted by the EMS system in the use of Heads-Up CPR devices as we continue to be part of progressive EMS system protocols in.

Goal 2: Continued Combine Police and Fire Department Active Shooter Hostile Events (ASHE) response and Rescue Task Force (RTF) training. Conducting large or smaller training, reviewing of tactics and equipment, including continued Command staff training.

Objective: Demonstrate a seamless Command and Control and deployment of RTF teams, high level of participants surveyed acknowledge there was improvement since combined training. Broaden overall Village department's participation.

Goal 3: Mobile Integrated Healthcare (MIH); Since 2018 the Department has budgeted funds to be prepared to be ready to fully participate in the MIH program as another level of care to offer our community. In 2020 into 2021 the Department continues its desire to ready for Mobil Integrated Health community Para-medicine. The Department budgeted funds 2020 – 2021 budget to participate in the MIH program.

Objective: The Department looks to position itself to participate fully in providing this type of service to our community. The objective was to be chosen as a participant in 2020, if not established in 2020 – 2021 budget the Department will re-budget funds in 2021 -2022. Once established the MIH program will be consistently evaluated for effectiveness, cost, self-funding, profitability, and improving service to the community.

Goal 4: Continued Emergency Preparedness in response to the COVID-19 Pandemic, including screening and vaccination of our personnel. Continue to follow the guidelines of the CDC and IDPH guidelines (Illinois Department of Public Health). Maintain and initiate polices and protocols that keep our personnel safe as Healthcare workers and provide response procedures that keep our patients and the community at large safe from further advances of the Coronavirus.

Training

EMS Peer II Educators

Increase Peer Education/Peer II competency through training conducted and Northwest Community Hospital during Paramedic lab class. Peer Educators are Peer level Paramedics that are certified to teach, observe and sign off Department personnel while performing skills using medical equipment and treatment procedures.

2021: Strengthen Peer II Educators skill levels and ability how they train personnel



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including using buildings, vehicles and other props that can make training more realistic.

Paramedic Preceptors

Eight Department personnel volunteered to be Paramedic Preceptors for non-department personnel. The Department sponsors non-affiliated Paramedic students of the EMS system to fully support the system and the level of Paramedic training the system provides.

2021: The Department hires only candidates who are already Paramedics so there is no need to send our personnel but the Department believes in supporting the EMS System Paramedic program and believes Paramedic Precepting keeps our Paramedics highly skilled. – This goal was not met due to the Department not participating in providing EMS System Field Internship ride time in 2020. In 2021 the Department is expected to take on (2) students for Field Internship/Ride Time.

Rescue Task Force Training

Combine Fire and Police RTF/ASHE (Active Shooter Hostile Events) Training conducted in August 2018 by the Illinois Tactical Officers Association (ITOA) instructors. They provided excellent training at the Elk Grove Village High School in 2018, the at our Public Works facility in 2021. Police and Fire Department members received instruction and hands-on training in patient bandaging, tourniquets, rapid medical treatment and triage assessment, and coordinated movement of patients, deployment concepts of RTF teams made up of Police and Fire personnel and simulating the operations under Unified Command. **2021:** This combine Police and Fire training is budgeted and will be schedule it is the hope that this type of training will continue every year. Fully allow the new Department **Rescue Task Force Officer** (position) to take over from the EMS Chief.

LUCAS Mechanical CPR Device

The Department purchased a LUCAS (Mechanical CPR device), a piston driven battery/electrical powered device that mechanically provides chest compression to a patient's chest. Department personnel were trained on the device then it deployed on the shift Commander's vehicle, which responds to all full-arrest calls.

2021: (2) additional devices were purchase in 2019 for a total of (3); a fourth device was purchase in the 2020 -2021 budget. It is our desire to continue to purchase the LUCAS devices until every Ambulance including reserve Ambulances carries one.

Equipment

2020 (2) LUCAS Mechanical CPR Devices - **2021** purchase () Additional LUCAS devices.

2020 Purchase (2) additional 'King Vision' Video Laryngoscopes for training. Every Ambulance and ALS Non-Transport vehicle has one (11), plus the two additional training devices. – **2021** purchase Sapphire Infusion Pumps for Norepinephrine administration if the department members with the EMS Committee deem they are beneficial. Purchase of Doppler I.V. devices to assist in finding a patient vein when starting an I.V.



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2020 New Ambulance with a new Stryker Power Load device installed and a new Stryker Power Stretcher – **2021** New Power Load for new Ambulance, replacement Stryker Power Stretcher. Patient safety and personnel safety has increased from the Power Loads including decreased back injuries reported.

2020 Purchase additional RTF supplies such as tourniquets, bandages and dressing for response and training use. - **2021** Purchase additional dressing and bandaging supplies for continued yearly RTF response training.

Staffing

Staffing a 4th Ambulance When possible when manpower permits (2020). Program staffing a 4th Ambulance Monday through Friday, 8:30am to 4:00pm (May 2019). This may occasionally require additional hired back personnel of one to two and can occasionally be staffed with existing manpower working for the day. The Department as included funds in its 2020 - 2021 budget once again for this program.

Program Improvement Plan

ROSC: With continued procedures of an increased response, additional LUCAS devices, new Cardiac Arrest response polices and SOP's from the EMS System, and the introduction of a "Heads Up" CPR device; demonstrate through QA/QI improvement of Returned of Spontaneous Circulation (ROSC) patients.

Mobile Integrated Healthcare (MIH): Become a participant in the program.

HIPPA Compliance Training: 2020 started the yearly review of HIPPA training annually using the Target Solutions software to assign and track training compliance. Expected to conduct HIPPA compliance review yearly per Federal standards.

4th Ambulance Staffing: Demonstrate need, success and profitability via quarterly reviews of the program.

Tracking EMS Continuing Education Hours through Target Solutions: Better track all required EMS continuing Educations hours through the Target Solutions training program. This includes real-time up to date tracking of monthly continuing education class attendance to insure compliance and prevent end of year penalties for missed classes.

Shift Mass Casualty/Mass Patient Incident Training: Increase shift wide and concentrated training in large multiple patient response, Triage, response tactics, scene size up and Mass casualty procedures and polices including review of the Departments 'Multiple Patient' green response books.