Performance Audit

Department of Public Safety
Bureau of Emergency Medical Services

Report by the
Office of City Controller

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CITY OF PITTSBURGH
OFFICE OF THE CITY CONTROLLER
Controller Michael E. Lamb

August 1, 2023

To the Honorable Mayor Edward Gainey an
Honorable Members of Pittsburgh City Council:

The Office of the City Controller is pleased to present this performance audit of the **City of Pittsburgh's Department of Public Safety's, Bureau of Emergency Medical Services (EMS).** The audit was conducted pursuant to the Controller's powers under Section 404 (c) of the Pittsburgh Home Rule Charter. This audit focuses on the largest division of EMS, the Ambulance Division, and assesses the 2021 policies, procedures, and processes. Performance data of the Bureau of Emergency Medical Services are examined including response times for high-priority calls, the effects of short staffing, the aging vehicle fleet and the effects of COVID-19.

EXECUTIVE SUMMARY

The City of Pittsburgh's Bureau of Emergency Medical Services is dedicated to the reduction of morbidity and mortality of residents and visitors through the provision of Advanced Life Support (ALS) prehospital care, medically directed Technical Rescue and transportation of the ill and injured to a hospital.

The entire concept of aiding injured patients enroute to a hospital originated in Pittsburgh with the formation of Freedom House Ambulance service in 1967. This ambulance service under the supervision of two doctors, provided on scene care and hospital transportation, to primarily residents of the Hill District and became a world-wide model for aiding the injured. In 1975, the City of Pittsburgh, modeling the success of the Freedom House Ambulance Service, started its own city-wide ambulance service, the Bureau of Emergency Medical Service (EMS).

Currently, the Bureau consists of three divisions: the Ambulance Division, Rescue Division, and Training Division. For ambulance service dispatch, the City is divided into 13 strategically located medic stations or districts throughout the City, which have 13 ALS medic units and three Basic Life Support (BLS) ambulances. They respond to emergency calls dispatched from the Allegheny County Emergency Services 911 Communications Center. Additionally, the Ambulance Division provides medical coverage for all special events held throughout the City of Pittsburgh. EMS administration should work with I&P to add a map with addresses of all medic station locations on their website. **(Recommendation 6)**

Emergency calls are taken by the combined County and City 911 Center using a Computer Aided Dispatched (CAD) software system and provides a timeline of emergency response events. The system records the time the call is received, ambulance on-scene arrival, departure to a hospital, hospital arrival and the time the responding ambulance is cleared for subsequent calls.

In addition, to recording ambulance times, the 911 Center's system uses a universal computerized system called Medical Priority Dispatch System (MPDS) to assist in dispatching medical emergencies. Each call is based on standardized questions to determine its priority status and then assigned a code. This allows emergency medical service providers to determine the appropriate response.

The Bureau of EMS has paramedics who are ALS certified and emergency medical technicians (EMTs) who are BLS certified. Paramedics can administer treatment and medications for various conditions, stabilize patients prior to transport to a hospital, or offer appropriate assistance to the patient, allowing them to remain at home. Paramedics can interchangeably work on either a medic unit or rescue truck and can respond to a variety of different types of calls, including calls from specialty teams such as River Rescue. Pittsburgh EMS has two heavy rescue trucks that are capable of vehicle extraction and other specialized types of rescue operations. EMTs provide medical assessment, triage, monitoring, treatment, transportation, and observation of patients.

Two person crews provide ambulance services to the City, 24 hours a day, seven days a week. The standard shift EMTs and paramedics are scheduled for is a 12-hour shift; normally 6 a.m. – 6 p.m., and 6 p.m. – 6 a.m. However, short staffing has required personnel to work 6 extra hours (extending shifts to 18-hours) causing an increase in overtime costs and fatigue. The Bureau should work with the City's Human Resource Department to explore ways of increasing EMT and paramedic applicants, recruitment efforts and improving EMS's website for ease of applying for positions. EMS administration should also work with the Office of Management and Budget to increase the number of budgeted paramedic and EMT positions. (Recommendation 1, 2, 5, 9)

EMS personnel range in years of service from fewer than 6 months to 43 years. Pittsburgh EMS is 70.5% white males, 17.5% white females, 4.5% Black males, 4.5% Black females, and 3.0% unspecified. The ages of EMTs range from 25–35 years old and paramedics from 35–50 years old. In the future, the hiring of a more diversified staff should be a goal. (Recommendation 5)

In 2021, there were a total of 83,901 dispatched calls. This averages to 229.87 calls per day, or 17.68 calls per station per day. The highest number of calls were for: sick person, breathing emergency, fall emergency, accident, fainting, chest pain, unknown problems, accident with entrapment, poisoning/overdose, and bleeding with 56,794 or 67.69% of all calls. Downtown had the highest number of EMS calls with 6,376 or 7.56%

The City accepts payments from insurance companies then bills the patient for the remaining balance. City residents, if identified, are not billed but if sent a bill are not responsible for payment. The billing process should be explained clearly on EMS's website. (Recommendation 10)

There are no federal or state laws regarding response times for EMS agencies. However, the National Fire Protection Association (NFPA) Standard 1710 regarding emergency medical service

response times states that first responders and BLS units should arrive on scene within a 4-minute time frame 90% of the time for all incidents. The NFPA also states that an ALS crew should respond within 8 minutes for priority calls; this is considered the "gold standard" though it is not legally binding. The auditors used an 8-minute and 59 second response time as a generally accepted standard response time to remain consistent with two prior City Controller's Audits in 2008 and 2014.

High priority or life threating emergencies response times were analyzed for the following four medical conditions: overdose/poisoning, trauma, cardiac emergencies, and stroke. The average response times for the four high priority ALS medic unit calls were 9 minutes and 26 seconds. Two of the categories, overdose/poisoning and trauma averaged under the 8 minute and 59 seconds recommendation for ALS medic units.

The 2014 performance audit reported cardiac arrest average response times as 7 minutes and 36 seconds in 2012 and 7 minutes and 58 seconds in 2013. In 2021, the average response times for cardiac emergencies is 10 minutes and 13 seconds. This means it took the paramedics 2 minutes and 26 seconds longer to respond to a reported cardiac emergency call than in 2012 and 2013. EMS administration should work to improve the response times for high-priority calls to meet the suggested standard response time of 8 minutes and 59 seconds. (Recommendation 7)

A common practice in the EMS industry is to calculate Unit Hour Utilization (UHU) to measure the effectiveness of an EMS agency's system. A unit hour is equal to one hour of service by an EMS unit. Utilization is the measure of productivity. The UHU of Pittsburgh EMS is 0.49525263 or 49.5%, which is over utilization. This means that EMS units are extremely busy with little downtime and can cause fatigue and burn-out which can lead to poor patient care or outcome.

The age of the EMS fleet is a concern. There are 79 vehicles in the Bureau; 32 vehicles are under five years of age or 40.05%, of EMS's total fleet; 53 (67.09%) of the vehicles are under 10 years old. The oldest vehicle is 38 years old. EMS administration should work with the new fleet manager to create a fleet replacement strategy and not deviate from it. This will insure adequate and safe vehicles for EMS's future. The possibility of securing grant money for purchasing new medic units and ambulances should be explored. (Recommendation 11, 12)

Our findings and recommendations are discussed in detail beginning on page 25. We believe our recommendations will provide more efficient operations within the EMS Bureau. We would like to thank the EMS staff for their cooperation and assistance during this audit.

Sincerely,

Michael E. Lamb
City Controller

INTRODUCTION

This performance audit of the City of Pittsburgh's **Department of Public Safety's Bureau of Emergency Medical Services (EMS)** was conducted pursuant to the City Controller's powers under section 404(c) of Pittsburgh's Home Rule Charter. This audit focuses on the largest division of EMS, the Ambulance Division, and assesses policies, processes, procedures, and performance data of the Bureau of Emergency Medical Services.

This is the third Controller's Office performance audit of the Department of Public Safety's Bureau of Emergency Medical Services. A 2014 performance audit examined the Bureau's Ambulance Division and compared response times for certain injuries with industry best practices. Another performance audit was released in 2008 and assessed response times, ambulance usage ratio, and contract compliance for billing and medical services.

OVERVIEW

The City of Pittsburgh's Bureau of Emergency Medical Services' website states that their mission, "... is dedicated to the reduction of morbidity and mortality of residents and visitors through the provision of Advanced Life Support (ALS) prehospital care, medically directed Technical Rescue, and transportation of the ill and injured". Pittsburgh's EMS headquarters is in the Shadyside neighborhood at 700 Filbert Street, Pittsburgh, PA 15232. The Bureau consists of three divisions: the Ambulance Division, Rescue Division, and Training Division.

EMS Three Divisions

Ambulance Division

The Ambulance Division provides emergency medical prehospital treatment, stabilization for injuries and illnesses, and transportation to hospitals. This Division consists of 13 ALS medic units, and three Basic Life Support (BLS) ambulances, located in 13 stations as shown in Table 4 later in the audit. The stations are strategically located throughout the City of Pittsburgh and respond to emergency calls dispatched from the Allegheny County Emergency Services 911 Communications Center. The Ambulance Division provides medical coverage for all special events held throughout the City of Pittsburgh.

All ambulances in the City's Bureau of EMS are certified by the Pennsylvania Department of Health's Bureau of Emergency Medical Service to meet the requirements set forth by the state detailing the equipment and supplies that must be carried to adequately treat the ill and injured. A brief list of the main equipment and supplies required on both ALS medic units and BLS ambulances is the following:

- Oxygen
- Oxygen Masks/Nasal Cannulas
- Phillips MRx Cardiac Monitor/Defibrillator
- Bandaging/Splinting Supplies
- Backboard/Cervical Immobilization Devices
- IV Supplies and Fluids
- Medications
- Basic and Advanced Airway Supplies and Equipment
- Stretcher and Linens
- Specialized Pediatric Equipment
- Portable Suction Unit
- Small and Large Hand Tools
- Life Jackets
- Child Safety Seat
- Personal Protective Equipment
- HazMat Equipment
- Water Rescue Rope Throw Bag
- Various Other Equipment and Supplies

Paramedics vs EMT

The Bureau of EMS has paramedics who are ALS certified and emergency medical technicians (EMTs) who are BLS certified. Paramedics can administer treatment and medications for various conditions, stabilize patients prior to transport to a hospital, or offer appropriate assistance to the patient which allows them to remain at home. Paramedics can interchangeably work on either a medic unit or rescue truck and can respond to a variety of different types of calls, including calls from specialty teams. Pittsburgh EMS has two heavy rescue trucks that are capable of vehicle extrication and other specialized types of rescue operations. EMTs provide medical assessment, triage, monitoring, treatment, transportation, and observation of patients.

Rescue Division

The Rescue Division was created in 1977 to enhance the delivery of medically directed technical, tactical, and heavy rescue services throughout the city. The Rescue division is part of three joint public safety teams: River Rescue, Tactical EMS Team (TEMS), and the Hazardous Materials Team (HazMat); as well as one special operation team, the Highly Infectious Disease Transport Team (ECHO).

Currently, the Rescue Division is staffed by six paramedic crew chiefs and 18 paramedics assigned to Rescue 1 and Rescue 2 heavy-duty rescue trucks. All paramedic crew chiefs and paramedics are state certified in a variety of rescue practices and can work in the Rescue Division if needed. All rescue vehicles are state certified as ALS response vehicles.

River Rescue Station

The River Rescue Station located near PNC Park, is operated 24/7, and staffed by two certified Public Safety/Master SCUBA Diver (Self-Contained Underwater Breathing Apparatus) paramedics and a boatman (pilot) who is a patrolman from the Pittsburgh Bureau of Police.

Tactical EMS (TEMS) Team

The TEMS team consists of 14 paramedics and two paramedic supervisors who have completed an 80-hour SWAT course, specialized treatment under fire training, along with Tactical Emergency Medicine training to provide support to the Pittsburgh Police Special Weapons and Tactics (SWAT) Team. TEMS trains regularly with Pittsburgh Police SWAT. They have added a physician to the team in order to provide on-scene medical direction. According to EMS' annual report, the TEMS team will provide medical support to the Allegheny County Police SWAT Team and the Pittsburgh FBI SWAT Team.

The Pittsburgh Police SWAT organization with the city's TEMS team, responds simultaneously to incidents such as barricaded persons, high-risk warrants, and dignitary protection. As stated on the EMS website, "Pittsburgh TEMS is recognized as one of the highest trained and most capable Tactical EMS units in the region and strives to maintain that status."

Hazardous Materials Response Team (HazMat)

The City of Pittsburgh HazMat Response Team, also known as the Gold Team, was established in 1986 between the Bureaus of EMS and Fire. The team is made up of paramedics, firefighters, and police officers. The HazMat Team is one of five teams that are part of the Allegheny County HazMat Response Team. According to one of the EMS Division Chiefs: "Throughout the years, Police were [are] involved due to the possibility of WMD [Weapons of Mass Destruction] at events." The police will also gather evidence in conjunction with criminal activity.

The HazMat Team is dispatched after a hazardous material release is confirmed by first responders; team leaders from Fire and EMS are notified via CAD. When requested, HazMat-1 truck responds, along with specialized HazMat response vehicles from the Pittsburgh Bureau of Fire. HazMat 1 is a custom truck that has special equipment, including chemical suits, gloves, boots, decontamination equipment, SCUBA gear, and other apparatus necessary for a HazMat situation. There are other vehicles dispersed as well: an EMS medic unit, and four vehicles from the Pittsburgh Bureau of Fire.

Highly Infectious Disease Transport Team (ECHO)

Pittsburgh EMS paramedics had started ongoing training for possible infectious disease outbreaks since 2008, right before the Swine Flu outbreak. The ECHO team was officially created in 2014 in response to the Ebola outbreak that occurred in the United States. The ECHO team consisted of 12 paramedics with advanced training in the use of Personal Protective Equipment (PPE). PPE is specialized protective clothing worn when a medical professional comes in contact with a person with a highly infectious disease (HID). PPE is talked about later in this audit. This team provides infection control training, advice, and technical support to other medical units in the field.

The COVID-19 pandemic required this team to operate 24/7 until the spring of 2021. ECHO assisted with transportation of vulnerable people to be quarantined in Safe Haven

facilities, mandated by Pennsylvania's Department of Human Services in conjunction with the Allegheny County Health Department. According to the EMS website, Pittsburgh was one of fewer than 10 agencies in Pennsylvania able to handle a patient with a confirmed HID diagnosis.

Training Division

Pittsburgh's job application for EMTs and paramedics requires a valid certificate of training from any state or nationally recognized association. Additional training is provided by EMS's Training Division located at 220 22nd Street in the Strip District, a city neighborhood. Paramedics and EMT's are provided with specialized training to handle a wide range of medical and rescue situations including Basic Vehicle Rescue and Basic Rescue Practices.

The Training Division instructors are City paramedics who pursued additional certification to be teachers. Almost all mandatory training is conducted by Pittsburgh EMS instructors in specific areas of education in any areas listed below. Instructors may work overtime when training. Individuals are paid at their standard rate during training. Various training can be about new methods of treatment, new medications, new standards in care, directives from the Medical Director, and/or the current situation in the world (terrorism, epidemics, etc.). Pittsburgh's EMS instructors receive training at National and local EMS conferences, participate in pre-hospital care research, and are currently involved in two national EMS research studies.

Other trainings, such as Hazmat and Tactical Medicine Tactics, are taught outside the Training Division. Personnel can attend non-mandatory training at locations outside of the City of Pittsburgh on their own time. Additional training allows the individual to meet continuing education credits for re-certification, be promoted, or assigned to other jobs within the Bureau. Listed below are some of the non-mandatory training certifications available:

- PA Department of Health Basic
- Vehicle Rescue
- PA Department of Health Special
- Vehicle Rescue
- High and Low-Angle Rope Rescue
- Hazardous Materials Training
- Confined Space Rescue
- Surface Water Rescue
- Swift Water Rescue
- Subsurface Water Rescue
- PA Department of Health Basic
- Rescue Practices
- Urban Search and Rescue
- Elevator Rescue
- Trench and Excavation Collapse Rescue
- Structural Collapse Rescue
- Electrical Hazard Response
- Railroad Hazard Response
- Weapons of Mass Destruction Response
- Mass Casualty Incident Response
- Fire Fighter I and II

EMS Special Operations

Pittsburgh EMS services all special events at city stadiums, parks, and neighborhood attractions. Special Operations includes motorcycle medics, bicycle medics, and honor guard personnel that are available and prepared to respond at city-wide special events.

Motorcycle Medics

Pittsburgh EMS has four specially equipped Harley-Davidson motorcycles containing ALS equipment. Paramedics are specifically trained in how to safely operate these motorcycles and can use them to quickly maneuver through traffic and crowds at large outdoor events. There are many places that an EMS unit cannot fit. Motorcycle medics are often credited with performing lifesaving interventions in areas that would be difficult to access by typical field units. All members of this team must successfully complete an 80-hour police motorcycle course and a 40-hour annual refresher program.

Bicycle Medics

Pittsburgh EMS also utilizes bicycles to provide medical coverage for large special events. Like motorcycles, these bicycles contain ALS equipment to maneuver in crowded events to offer medical care faster than traditional methods. The bicycles also allow paramedics the ability to traverse difficult terrain that would otherwise only be accessible by foot.

Honor Guard

The EMS Bureau's Honor Guard was established in February of 1995 to help honor three City of Pittsburgh Firefighters who tragically lost their lives in a structure fire on Valentine's Day. It started as three individuals holding flags in remembrance at various functions around the city. Since that time, the Honor Guard has grown to 15 members. The Honor Guard participates at different functions and events such as parades, banquets, dedications, memorial services, funerals, conferences and inaugurations. The Honor Guard has traveled out of state for several ceremonial details as well.

A Pittsburgh First -- Freedom House Ambulance Service

The 1960's and 1970's were challenging times in Pittsburgh, especially for the predominantly Black Hill District, where most residents fell below the poverty line and faced racial injustice. In 1967, the Freedom House Enterprise was founded with a grant from the federal government to provide economic stimulation to Pittsburgh residents, specifically those in the Hill District, with the goal to create community-based job training and employment opportunities for those in the city. (New England Journal Medicine, April 15, 2021; *Race, Policing, and History: Remembering the Freedom House Ambulance Services*. Matthew L. Edwards, M.D)

Until 1967, sick or injured people who needed hospital care were transported by the police in their police wagons or by a funeral home hearse to the hospital for medical attention.

No police officers or mortuary workers had medical training, medical supplies, or equipment to aid the patient before or during transport or equipment to aid the patient before or during transport.

The police, fire, and funeral directors operated throughout the city of Pittsburgh but did not like to go to the Hill district because of its predominantly Black population. It was the 1960s and race riots and civil rights fights flourished throughout the nation and Pittsburgh was no exception. In 1967, Freedom House Enterprises, started an ambulance service under the supervision of two doctors, creating the first ambulance service in the nation.

To quote the New England Journal of Medicine, April 15, 2021; *Race, Policing, and History: Remembering the Freedom House Ambulance Services*, by Matthew L. Edwards, M.D, "EMS quality was often worse in Black communities. In this bleak environment, Freedom House enabled a group of disadvantaged Black laypeople to establish a model for paramedic training that ultimately set the U.S. standard."

The Freedom House Ambulance service mission was to aid medical emergencies in the Hill District and Downtown. It was comprised of an all-Black team of paramedics who pioneered the profession from 1967-1975. Dr. Peter Safar, an Austrian doctor who invented CPR, helped to outfit the vehicle, and train the employees for optimum care of the public. In its time, Freedom House saved thousands of lives. The service influenced the emergence of professional paramedic services in cities across the U.S., eventually setting the gold standard of emergency medical care.

According to EMSWORLD magazine The Forgotten Legacy of Freedom House by Valerie Amato, NREMT April 29, 2019:

> Freedom House was disbanded in 1975 when the city took over the program. It had encountered increasing difficulties under (Mayor) Barr's successor, Pete Flaherty, whose actions impeded operations—for instance, prohibiting the use of sirens downtown because of alleged noise complaints and not expanding Freedom House's jurisdiction when wealthier communities protested that poorer neighborhoods were receiving better medical care. [Emphasis added] While funding had always been difficult, Barr always made sure monies were available. Flaherty never had anything good to say about the service, says Starzenski* —and didn't hesitate to use racial slurs. Flaherty eventually froze Freedom House's funding and seized its assets to be used for the city's new EMS agency. . . . . Ultimately only five of the original 26 Freedom House members remained in the field, and only one, John Moon, earned a position in leadership as assistant chief, but even he was never offered a promotion to become chief.
>
> *Gene Starzenski, a paramedic, filmmaker of the documentary *Freedom House: Street Savior*s.

Information about the history of Freedom House Ambulance service was taken from a documentary video made in 2009, called Freedom House: Street Saviors, and a September 27, 2021 article found. Currently, the Bureau of EMS honors and acknowledges the Freedom House by displaying its logo on the left side of all vehicles in their fleet so it will never be forgotten.

Photo 1 is a current City of Pittsburgh ambulance with the Freedom House logo on a door. The photo was taken while visiting the EMS Training Division.

PHOTO 1
Freedom House Logo
City of Pittsburgh Ambulance
2023

Union

City of Pittsburgh paramedics and EMTs, are members of the Fraternal Association of Professional Paramedics. The latest contract effective dates are January 1, 2020, through December 31, 2023.

List of Acronyms:

ACHD – Allegheny County Health Department
AED – Automatic External Defibrillator
ALS – Advanced Life Support
ARPA – American Rescue Plan Act
BLS – Basic Life Support
CARES – Coronavirus Aid, Relief, and Economic Security Act
CARES – Coronavirus Aid, Relief and Economic Security
CAD – Computer Aided Dispatch
CPR – Cardiopulmonary Resuscitation
DHS – Department of Human Services
ECHO – Highly Infectious Disease Transport Team (The acronym does not correspond to its name.)
EMS – Emergency Medical Services
EMT – Emergency Medical Technician
HazMat – Hazardous Materials Team
HID – Highly Infectious Disease
MPDS – Medical Priority Dispatch System
NFPA – National Fire Protection Association
PCR – Patient Care Report
PODS – Points of Dispensing and Vaccines
PPE – Personal Protective Equipment
SWAT – Special Weapons and Tactics
SCUBA – Self-Contained Underwater Breathing Apparatus
TEMS – Tactical EMS Team
UHU – Unit Hour Utilization
VA – Veterans Affairs

OBJECTIVES

1. To examine the Bureau's, organizational structure, mission, and responsibilities,
2. To report the Pittsburgh's Emergency Medical Service's policies and procedures,
3. To assess critical response times regarding, trauma, overdose, stroke, and cardiac emergencies
4. To assess staffing levels, qualifications, training, overtime pay, and collections,
5. To report overall condition of the EMS fleet, issues and status for optimum operations,
6. To evaluate the effects and impact of COVID-19 on the Bureau,
7. To make recommendations for improvement.

SCOPE

The scope of this performance audit encompasses the staffing, response times, overall fleet condition, and budget for Pittsburgh's EMS in 2021. Pittsburgh's EMS emergency response to COVID-19 pandemic covers 2020 to 2021; monies received from outside sources for COVID-19 were from 2020 and 2021. Penetrating trauma survival ratings were from 2021 and 2022.

METHODOLOGY

The auditors had Microsoft Teams and in-person meetings with Pittsburgh's EMS chief, deputy chief and patient care coordinator. Numerous email correspondences were provided between the auditors and EMS administrators.

Auditors reviewed a previous City Controller's Office EMS audit conducted in 2014 to examine previous recommendations and determine if EMS has implemented those recommendations.

The auditors analyzed the 2021 Computer Aided Data (CAD) report compiled and provided by the EMS patient care coordinator/I&P liaison. The CAD data contained the following information for each call received: Case Number, Entry Date, Call Type, EMS District, Neighborhood, Dispatch Unit, Entry Time, Dispatch Time, Enroute Time, On Scene Time, Transport Time, At Hospital Time, Close Time, Hospital and Priority Code.

The EMS 2021 CAD data was used to analyze response times of calls assigned the two highest priority codes, E0 and E1. Of these E0 and E1 calls, the auditors selected four call types: Overdose/Poisoning, Trauma, Cardiac Emergencies and Stroke (comparable to the City Controller's 2014 performance audit). The auditors used Microsoft Excel to calculate the response times of the medic units Dispatched Time to On Scene Time arrival. The Penetrating trauma survival ratings from 2021 to 2022 were compared.

The 2020 and 2021 EMS Operations Summaries were reviewed for pertinent information. The Cardiac Arrest Registry Enhance Survival and Stroke reports compiled by EMS were also reviewed.

The operating and capital budgets for 2020 and 2021 were examined pertaining to the overall budget, employee staffing, overtime, vehicle services, and equipment supplies.

The auditors toured EMS headquarters and supply depot located in Shadyside, a city neighborhood, to examine the equipment and supplies necessary for EMS operations.

The auditors reviewed the City of Pittsburgh's EMS website. Auditors received a list of vehicles that make up the EMS fleet from EMS administration, which included the unit #, year, make, model VIN#, plate # and description of use. The EMS Chief and City Fleet Manager discussed and outlined the past and present purchasing plans for new vehicles.

The auditors visited the EMS Training Division and a medic unit to speak with the staff, EMTs, and paramedics, and to observe EMS operations. The auditors witnessed EMS operations and procedures with a ride along in an ALS medic unit.

The Controller's Office conducted an EMS audit in 2014 and examined 2012 and 2013 average response times. The 2014 audit reported cardiac arrest average response times as 7 minutes and 36 seconds in 2012 and 7 minutes and 58 seconds in 2013. This audit has found that in 2021 the average response times for cardiac emergencies is 10 minutes and 13 seconds.

To compare the findings of the two audits, the auditors took the average of 2012 and 2013 response times for Cardiac Arrest (7:36 and 7:58, respectively) for an average time of 7 minutes 47 seconds. This average was then subtracted from10 minutes and 33 seconds. The difference is 2 minutes and 26 seconds. This means that in 2021, it took the paramedics 2 minutes and 26 seconds longer to respond to a reported cardiac emergency dispatched call.

The auditors received and analyzed information from a CAD report from the patient care coordinator that showed the number of dispatched calls made to the university campus housing addresses for the University of Pittsburgh, Carnegie Mellon University, and Duquesne University.

STATUS OF 2014 PERFORMANCE AUDIT RECOMMENDATIONS

The City of Pittsburgh's Controller's Office completed a performance audit of the Bureau of Emergency Medical Services in October 2014. The following *italicized* paragraphs are the recommendations from the 2014 City Controller's Performance Audit and the 2014 Bureau's responses to those recommendations. **The updates that are listed and underlined, are the Bureau's written response as to the 2022 status of each recommendation.**

Recommendation 1:

PEMS should implement the inclusion of a city-designated neighborhood identification field for calls such as census tract that would populate automatically, along with the street address, on its reports for management purposes. If this cannot be done automatically then the Paramedics should be required to enter neighborhood information manually.

Auditee Response: We agree with this recommendation and currently have the capability to develop a database system to generate this information out of existing Computed Aided Dispatch (CAD) data.

2022 Auditee Update: "This data is populated when a report is gathered from the Computer Aided Dispatch (CAD) data. This is not populated and cannot be populated on EMS Charts [computer recording system for patient care reports]"

Recommendation 2:

A code for null calls that explains the cause should be included in EMS Charts for management purposes. Reduction of null [cancelled] calls, which amounted to 18,197 trips (15% of the total dispatches) during the audit period, should be a management goal.

Auditee Response: We agree that null calls are a strain on the response capability of the system. Many of these calls are generated by "drive by" cell phone 911 calls by the public that we must dispatch units for to investigate. We are evaluating options for community education programs to reduce the incidence of these calls.

2022 Auditee Update: "The reduction of null calls will likely not decrease and will more likely increase with the number of concerned citizens calling 911 with some type of concern. It would be negligent of the Bureau of EMS not to response to a unit to investigate these responses thus opening the City to liability.

On the PCRs, [Patient Care Report in EMS Charts], the outcomes states why the call was null, ex: -cancelled by EOC, no patient found, refused treatment, etc."

Recommendation 3:

PEMS [EMS] administration should make improving the response time for priority (E0, E1) calls a major objective for the Bureau.

Auditee Response: We agree with this recommendation and are currently investigating different options and strategies to improve response times to high priority calls

2022 Auditee Update: "The Bureau of EMS has decreased the response time for priority (E0, E1) calls by placing in service the Basic Life Support (BLS) ambulances sub-division in 2017; this allows Advanced Life Support (ALS) medic units to be available to respond to the priority (E0, E1) calls. With medic units being more available, this reduces the response time to those priority calls."

Recommendation 4:

PEMS [EMS] management should investigate and examine the differences in the above response times with the goal of improving the response times for ACS [acute coronary syndrome] and Stroke dispatches.

Auditee Response: We agree with this recommendation and as in our response to recommendation 3 are exploring options to improve response time to these calls and all high priority calls

2022 Auditee Update: "As stated above in Recommendation #3 update, we [EMS] decreased response times to E0 and E1 priority calls, thus decreasing the response times for ACS and Stroke dispatches. Pittsburgh EMS is one of the highest-rated prehospital services in the Country shown by different state and national reports.

CARES Summary Report [gathered by the assistant Chief] (1/1/21-12/21/21) (cardiac arrest patients)

Survival Rate	Pittsburgh	State	National
No Bystander CPR	44.4%	28.1%	29%
With Bystander CPR	47.8%	30.3%	32.5%

Stroke Care Report (1/1/21-12/31/21)
First Medical Contact (FMC) to CT imaging (national goal of less than 50 minutes)
Pittsburgh EMS achieved this 82.7%
(Note: there must be an understanding of the procedures that take place in the ER once the patient arrives, increasing time before entering the CT scanner)

Penetrating Trauma Survival Report (1/1/21-12/31/21)
All 90.5%
Excluding penetrating trauma to the head 94.6%"

Recommendation 5:

The procedure used by PEMS to dispatch its rescue vehicles in the City should be examined and adjusted, if possible, to reduce the number of cancelled calls sent to rescue vehicles.

Auditee Response: We disagree with this recommendation. Our concept of operations for an aggressive, forward leaning response strategy to life threatening emergency calls requires the current approach of early initial dispatch of the rescue vehicles. We are willing to accept the null call rate so that these specialty resources are in a position to be on life threatening emergency calls early on.

2022 Auditee Update: "After reexamining Recommendation #5, while the Bureau of EMS still disagrees with this recommendation for a majority of the null [canceled] responses and continue to accept these null responses. We are currently working to reduce some of the responses for the Rescue Division."

Recommendation 6:

PEMS administration should consider placing another daytime unit in the West End to primarily serve the West End area. It is the only ambulance that exceeded the UHU maximum workload for both 2012 and 2013.

Auditee Response: We agree with this recommendation. If manpower and staffing would allow for placing an addition medic unit in service in the West End, we would do so.

2022 Auditee Update: "The Bureau of EMS has placed the BLS ambulances in service in 2017 to assist in the increased call responses. Currently, the Bureau wants to place into service two more ALS medic units and one more BLS ambulance. To increase the number of ALS and/or BLS units in service, the total number of personnel allowed by the EMS budget would need to be increased. Placing additional units in service without an increase in the total number of personnel is detrimental to the health and welfare of our personnel."

Recommendation 7:

PEMS management should strive to reduce the high percentages of E0 and E1 priority calls that are downgraded by the paramedics in the field. PEMS Management should review and if possible, revise, the dispatch protocol so calls could be clarified and assigned more accurate disposition codes.

Auditee Response: We agree with this recommendation. We will work with our partners at the Allegheny County 911 center to explore evidence-based options for reducing the number of over-prioritized calls.

2022 Auditee Update: "While the Bureau of EMS is working to reduce these types of calls, these call types are generated by a computer software program called "Medical Priority Dispatch". This is a national recognized computer aided dispatch (CAD) software. This takes away from human influence or bias. Under prioritizing of responses could lead to the potential increase of the illness or even death of a patient, a risk that is not acceptable."

Recommendation 8:

PEMS management should emphasize to paramedics that all data boxes must be completed.

Auditee Response: We agree with this recommendation. We are currently developing a quality improvement and educational program to improve documentation and data collection system wide.

2022 Auditee Update: "We still agree on this recommendation, it should be understood that not all boxes are relevant to every patient."

Recommendation 9:

Ohio Valley, St. Clair, Jefferson and Passavant hospitals all have Emergency Departments, and PEMS may wish to consider increasing their use for patient treatment from neighborhoods outside the rivers that do not have a near-by City hospital.

Paramedics cannot refuse to deliver a patient to a hospital, and through paramedic interview, many of the less serious calls use the Units for preliminary diagnosis and/or as transportation to a local emergency room.

In 2012, 33,222 priority calls had a transport rate of 81.0% (26,899) and in 2013, 32,636 priority calls had a transport rate of 81.4% (26,567). In 2012, 18,749 less serious calls had a transport rate of 80.0% (14,950) and in 2013, 18,783 less serious calls had a transport rate of 79.8% (14,984). During the audit period, priority calls resulted in transports 81.1% of the time while less serious cases were transported 79.9% of the time.

Auditee Response: We disagree with this recommendation. We will continue to monitor and allow transports to out of city hospitals on a case-by-case basis. Yet, out of city transports have a negative effect on unit availability, unit utilization, system status management and response times.

2022 Auditee Update: "We continue to disagree with this recommendation. Since the 2014 audit, the Bureau of EMS continues to allow transports to the listed out of the City hospitals and have added UPMC Passavant and AHN Brentwood Hospitals on a case-by-case basis. Even with the limited number of ambulances and medic units available, the Bureau allows transport to these out of the City hospitals. Patients residing outside of the rivers choose transport to a hospital inside the rivers, and EMS personnel cannot transport a patient to the closer outside of the City hospital without the patient's approval. When transporting patients to outside the City hospitals, causes an increase in **response times** once the ambulance or medic unit returns to service and responds to the next call."'

Recommendation 10:

PEMS reporting should include a data field to distinguish mutual aid trips from transports to non-City hospitals approved by the District Chief.

Auditee Response: We disagree with this recommendation. While we have no issue with data collection on these issues (as noted in Recommendation 8), transports to out of city hospital and mutual aid calls are two separate operational issues and should not be addressed as one.

2022 Auditee Update: "Mutual aid requests are documented in the CAD data report provided for 2021 and the receiving hospitals are documented as well. These requests for mutual aid define the need for an increase of ambulances and medic unit staffed by EMS personnel."

Recommendation 11:

PEMS should continue the practice of waiting in central locations for calls rather that waste time and fuel returning to the paramedic station.

Auditee Response: We agree with this recommendation. The District Chiefs currently perform system status management and dynamic redeployment of units during periods of high unit utilization.

2022 Auditee Update: "With the increase of responses, this current Administration, disagrees with the Recommendation and the previous Auditee's response. With the increased unit responses and the decrease in manpower (increased forced overtime) it is imperative this Administration provides our personnel the best working environment possible. The health and welfare of the personnel has a direct impact on patient care and outcome. Our personnel must have the time and space to decompress from critical responses. As well as, completing patient care reports (PCRs), cleaning vehicles and themselves, a clean area to eat and drink, and to use the restroom. Paramedic/EMT houses (stations) are just that… a house. Our personnel are away from their homes and families for 12-18 hours a day. It would be irresponsible to have our personnel (family) stay in a vehicle for 12-18 hours a day. With hospitals being predominately located inside the rivers, units waiting in a central location or near hospitals will cause an

increase in response times to the neighborhoods away from this area, which could affect patient outcomes. The District Chiefs provide excellent guidance when response levels are extreme and move unit or hold units in those increased response areas when needed."

Recommendation 12:

As the lead agency of a multi-agency system, PEMS should attempt to integrate both the Fire Bureau's first responder times and the hospitals' survival rates into its EMS Charts Report.

PEMS captures a great deal of data, and "big data" can sometimes be difficult to organize into manager-friendly report formats. CAD data lends itself more readily to manipulation, while the EMS Charts data seems to be useful on an individual basis or by selecting testing samples.

Auditee Response: We agree with this recommendation. We would be happy to work with our partners in Innovation & Performance to improve our capability to acquire and integrate data so that we can enhance or capability to generate easily interpretable reports on operational and clinical issues. We are currently exploring our options for improving the hardware and software we are using for data collection system-wide.

2022 Auditee Update: "The Bureau of EMS agrees with the Recommendation and the Auditee response. EMS Charts has limited ability to interact with CAD data, the same is true with other patient care reporting software. Hospital survival-rate data does not interact with a prehospital patient care report. The prehospital patient care report (EMS Charts) reflects only the care the personnel on the ambulance or medic unit provide. Each responding unit is responsible for their patient care report. EMS, First Responder, and hospital reports do not join as one report."

Recommendation 13:

PEMS should employ a data-base manager, either hired through the EMS Bureau or provided as a liaison by the Innovation and Performance Department, to organize its data so that it can be sorted or queried in a management friendly fashion.

Auditee Response: We agree with this recommendation. As is Recommendation 12 we would be happy to work with Innovation & Performance on our data management systems.

2022 Auditee Update: "The Bureau of EMS is participating in the City of Pittsburgh Data Governance Project. We have two personnel tasked with Data Governance. Clinical data is managing by one person, and another manages operational data."

Recommendation 14:

PEMS Management should have Payroll staff categorize overtime hours worked into work-related overtime hours, training overtime hours and special events overtime for management purposes.

Auditee Response: We agree with this recommendation. We will explore enhancing our current technology to achieve this metric.

2022 Auditee Update: "This Recommendation is already in place."

FINDINGS AND RECOMMENDATIONS

EMS Requirements for Employment

The Pittsburgh EMS department follows the Pennsylvania state guidelines for candidates applying for employment in their department.

The following is a list of criteria required to become a Pittsburgh paramedic and EMT:

- All applicants must possess a current valid Certificate of Completion of Emergency Medical Technician-Paramedic training or a Prehospital Registered Nurse Certification.
- Possess a current State Paramedic Certification and/or a nationally recognized certification (only when being hired as a paramedic).
- Current valid Pennsylvania driver's license.
- Become a City of Pittsburgh resident before being appointed to the position.
- Candidates must pass the physical agility test.
- Candidate must past the psychological evaluations.
- Upon receiving an official offer, candidates must produce proof of COVID-19 vaccinations.

According to the City of Pittsburgh online career website, certification programs can be completed through the Center for Emergency Medicine Program, the Community College of Allegheny County and the University of Pittsburgh Medical Center, among others. Also, Pittsburgh EMS has a partnership with Pittsburgh Public Schools with the CTE program (Career and Technical Education). Beginning in the 10th grade, students can begin to receive training to later become an EMT.

Tuition Reimbursement Benefit

In order to be hired by Pittsburgh EMS, an applicant must already have an EMT certification. Currently, Pittsburgh EMS does not reimburse for EMT courses and certification. Once hired an EMT can pursue becoming a paramedic and utilize the City's tuition reimbursement benefit, by attending paramedic courses, and submitting the cost to the City for reimbursement. The tuition and lab fee reimbursements are stated below from the EMS contract:

> The employee must be enrolled in a course at an accredited college, university, technical or trade school or a certified apprenticeship program. An eligible employee must receive approval from the Director of the Department of Personnel and Civil Service Commission for which reimbursement is sought... at least ten (10) workdays prior to the first day of the course. Eligible employees who receive pre-approval will receive reimbursement for fifty percent (50%) of tuition and lab fees... Reimbursement will be made to the employees upon successful completion of a pre-approved course and submission of a request for reimbursement on a form supplied by the City.

> Any EMT that is enrolled in an educational program to become a Paramedic and agrees to enter into a binding agreement to remain employed by the Bureau of EMS for a period of at least thirty-six (36) months [3 years] shall be entitled to 100% reimbursement of all Tuition and Lab Fees associated with the education upon successful completion of the program and meeting the requirements set forth by the Commonwealth of Pennsylvania to gain certification as a Paramedic.

RECOMMENDATION 1:

The EMS administration should work with the City of Pittsburgh's Human Resources to explore ways to increase EMT applicants for the City.

One suggestion would be to start an apprenticeship program for interested individuals who might not have the means to pursue training. This program would be offered like that of the police and fire recruits. Recruits are hired by the City and receive on the job training.

Another suggestion would be to work with an organization that offer Emergency Medical Technician certification and ask them to promote (via flyers, guest speakers, social media etc.) working for Pittsburgh EMS. It should be pointed out to prospective employees that, if hired by Pittsburgh's EMS as an EMT, and after a probationary period, the individual could participate in the City's tuition reimbursement program to complete the advanced paramedic certification.

Hiring Process and Timeline for Employment

To apply for paramedic or EMT positions of Pittsburgh EMS, applicants must first access the City of Pittsburgh's Online Career Center. Once the application is submitted, the applicant completes the online City of Pittsburgh Supplemental Form questions.

Once all documents are received, the candidate's documents are reviewed, and the candidate is notified if they are found to be acceptable. In the event the applicant is eligible, they will be scheduled to complete a Civil Service Examination. Passing the exam puts them on the qualifying list, applicants are not ranked as this is a non-competitive position. As per the Fraternal Association of Professional Paramedics union contract, "New employees shall be regarded as probationary employees until one hundred eighty (180) calendar days after their date of hire or one hundred twenty (120) calendar days after completion of paramedic certification training, whichever is longer."

The Director of Human Resources and Civil Service provided the employment process timeline in Table 1, for paramedics and EMTs hired from June 2022 through December 2022. Human Resources also stated the required minimum of time as required by the Civil Service Commission. The auditors used this information to estimate the process by weeks. The timeline for employment for paramedics and EMT positions is estimated to be approximately six months The auditors interviewed a current City of Pittsburgh paramedic, who believed that the six

months hiring process was too long as potential candidates may obtain other employment opportunities before the end of the city process.

TABLE 1
2022 Example of Employment Process Timeline
For Paramedics and EMTs

Processing Steps	Dates	Required Minimum	Estimated Timespan (By Week)
Announcement Posted	June 13 - July 25	Minimum of 3 weeks, but typically posted for 4 - 6 weeks.	Open for a max of 6 weeks
Admission Letters Emailed	July 29	After announcement closes, applicants are screened and emailed at least 10 days before the test, per Civil Service Commission rules.	Week 1
Paramedic Pretest Training	August 10	Held 2-3 weeks prior to test for candidates to improve skills.	Week 3
Admission Letters and Background Packets Sent	August 17	10 days before exam, per Civil Service Commission rules.	Week 4
EMT/Paramedic Fitness Exam	August 31	N/A	Week 6
Office of Municipal Investigations (OMI) Background Investigation of Selected Candidates	September 2 - 30	OMI requires a minimum of 4 weeks for *polygraphs, drug screens, and fieldwork.*	Weeks 6 - 10
HR Reviews Folders/ EMS Review Folders/ Chief Selection Interviews	October 3 - 13	HR and 3 EMS chiefs review candidate folders and schedules interviews for those selected.	Weeks 12
Conditional Offers	October 13	Immediately following interviews. HR is then advised of the number of candidates needed to be interviewed with the doctor.	Week 13
Online Assessments/ Psychologist Interviews/ Psych Review Panel	October 17 - 21	Candidate notice given at conditional offer subject to psychologist schedule and number of candidates; some assessments are conducted online.	Weeks 15 - 17

TABLE 1 (continued)
2022 Example of Employment Process Timeline
For Paramedics and EMTs

Processing Steps	Dates	Required Minimum	Estimated Timespan (By Week)
Medical Examination	October 27 - 31 (Dates vary)	Mercy Hospital needs 10 business days for return of results.	Week 18
Final Offers Extended	November 18	Once results received from Mercy Hospital.	Week 21
Candidate Two Week Notice	November 18 - Dec 4	Candidates give notice to their current employers.	Week 21 - Week 23
Anticipated Paramedic New Hire Start Date	December 5	HR aims to bring candidates in at the beginning of the month due to issues around establishing residency.	Week 24

Source: City of Pittsburgh Department of Human Resources

General Application Requirements for Paramedics and EMTs

Applicants must submit or show proof of the following at the time of filing their application (unless otherwise indicated below) or the application will be disqualified. Disqualifications are based on any of these general application requirements and are not subject to a Civil Service appeal. A copy of the actual job duties of a Paramedic or EMT can be found in the Appendix as Exhibit A.

- A completed online City of Pittsburgh Employment Application, including an online Employment Profile Data, consisting of education and work experience, a completed online City of Pittsburgh Supplemental Form questions, and a resume.
- Applicants must become residents of the City of Pittsburgh prior to employment and remain a resident throughout employment.
- The City of Pittsburgh requires all employees to be vaccinated against COVID-19.
- A current, valid Class C Pennsylvania Motor Vehicle Operator's License at the time of filing application or prior to appointment, which must be maintained throughout employment.
- Written requests for a special accommodation based on the Rehabilitation Act of 1973 and the Americans with Disabilities Act will be considered by the Department of Human Resources and Civil Service on an individual basis.
- A current, unrestricted Emergency Vehicle Operator Course certification must be presented at appointment and maintained throughout employment.

- Applicants must possess a current valid Completion of Emergency Medical Technician certificate from any state or a nationally recognized certificate at the time of filing application.

Continuing Education

Continuing education is required for both paramedics and EMTs. According to the EMT and paramedic contract, "If an employee is required to attend alternative training by the City or the Medical Director, then he or she will be paid for the time spent in such training at the appropriate regular or overtime rate."

Individuals are certified in various course work as they chose. However, according to EMS administration, Pittsburgh paramedics maintain their paramedic certification by completing a minimum of 36 credits biennially (once every two years). At least 27 of the credits are to be in clinical patient care and other specific education courses.

Continued education required for EMTs is 24 credits of instruction every three years, as approved by the Bureau of EMS. At least 18 of the credits must be in clinical patient care and other specified education courses. Both paramedics and EMTs may select other core education courses as specified in a notice the Bureau publishes in the Pennsylvania Bulletin.

Maintaining Certification

Pittsburgh paramedics receive their medical direction/command through the University of Pittsburgh's Center for Emergency Medicine and work under the guidance of the medical director. In addition to this training, many of the paramedics have completed additional certification training through the National Registry of EMTs.

In order to re-register for their certification, paramedics and EMTs are required to complete an electronic application within 90 days of their expiration date, by accessing the State of Pennsylvania's EMS Registry account.

The Emergency Medical Service Vehicle Operator (EMSVO) certification expires on the same date as the registrant's primary EMS certification. If re-registration is on a 3-year renewal cycle, three education credits are required; or two continuing education credits are required if the registration is on a 2-year renewal cycle.

In-house Training

The monitoring and completion of EMS mandatory education is the responsibility of the Training Division. Yearly training is conducted three times per year for multiple training sessions for all EMTs and Paramedics. New hires have three weeks of in-house training and two weeks of field training.

Many paramedics are certified as instructors in a wide range of related disciplines, including Emergency Medicine, Rescue, Hazardous Materials, and more. Paramedics routinely

share their knowledge and skills with responders throughout Pennsylvania such as Paramedic students, emergency physician residents, RNs, and so on.

The Training Division also provides a wide range of educational opportunities, such as CPR/AED to other City of Pittsburgh's Bureaus and departments, as well as the public. The Training Division also teaches the First Responder program for all City of Pittsburgh Bureau of Police officers and recruits.

Training classes are conducted to a standard rather a certain number of hours. If a training finishes before the allotted time of 4-8 hours, additional topics can be reviewed. The classes and material taught each year changes due to new methods, treatments, and medications standards. Direction from the medical director is used to determine which classes would be most useful.

The Training Division requires and utilizes multiple technology devices within their classroom setting. Of the equipment used for hands-on demonstration, two of the most valuable devices are the Patient Monitoring Simulation System and the SimMan Mannequin. The Patient Monitoring Simulation System is a high-tech, fully integrated machine that replicates patients' vital signs and illnesses to better train personnel with real life scenarios.

On December 10, 2021, EMS purchased two "Manikin Advanced Life Support (ALS) Trainer STAT 300" training mannequins from Bound Tree – a medical supplies distributor. Each mannequin cost $5,169.77, totaling $10,339.54.

Incorrect Application Webpage

While investigating the hiring process, the auditors discovered another Pittsburgh EMS employment website. The website purports to contain information regarding employment for paramedic and EMT positions, but instead displays information for the Bureau of Police and Bureau of EMS.

Finding: The EMS website is wrong and includes mixed information between Bureau of Police and Bureau of EMS, making it difficult for possible applicants to understand the application process.

RECOMMENDATION 2:

The EMS administration should contact the Department of Innovation & Performance (I&P), the City's computer administrator, about changing or eliminating the above linked website. The information is incorrect and might confuse a potential applicant delaying their application process.

Operations Summary Report

Pittsburgh EMS compiles an operations summary report every year. This report includes the yearly budget, staffing levels, call volume, severe call type statistics, division activity, training, public health programs, and since 2020, COVID-19 operations.

The only published Operations Summary Report on the EMS website was for 2020. EMS administration compiled a 2021 Operations Summary Report but did not publish it on their website.

Finding: Only the 2020 Operations Summary Report is listed on the Pittsburgh EMS website page.

In the 2021 Operations Summary Report, the budget totaled $26,426,306 with salary and wages being $18,818,796. The report states that $13.29 million comes from monies recovered from a patients' health insurance. Service calls total 80,375 in 2021, with 40,124 being transported to the emergency department. The most calls came from drug overdosing/intoxicating at 4,583. In 2021 Pittsburgh EMS encountered 1,726 confirmed COVID-19 cases across the city. Remarkably, only 15 EMS personnel contracted the virus, which is only 7.5% of EMS employees.

RECOMMENDATION 3:

The Bureau of Emergency Medical Services administration should continue to publish annual operations summaries on their website, with the support of the Department of Public Safety. These operation summaries provide transparency with readily available information to the public about EMS' operations and their importance to the community.

EMS Staffing

Personnel Positions

In 2021, the Bureau of EMS had 213 positions for a total budget of $13,908,159. The 213 positions that were budgeted include: 1 EMS chief, 1 deputy chief, 1 assistant chief, 3 division chiefs, 1 patient care coordinator, 10 district chiefs, 39 crew chiefs, 127 paramedics, 28 EMTs, and 2 administrative assistants. As of December 31, 2021, the bureau has 207 active-duty employees, according to the EMS administration, as follows: 24 EMTs, 120 paramedics, and 37 crew chiefs. This is 2.8% less than the budgeted amount.

Medical Director

According to the Pennsylvania State statute (Pa. Code 1003.5), every EMS agency must function and work under a licensed physician in Pennsylvania. The Pittsburgh EMS medical

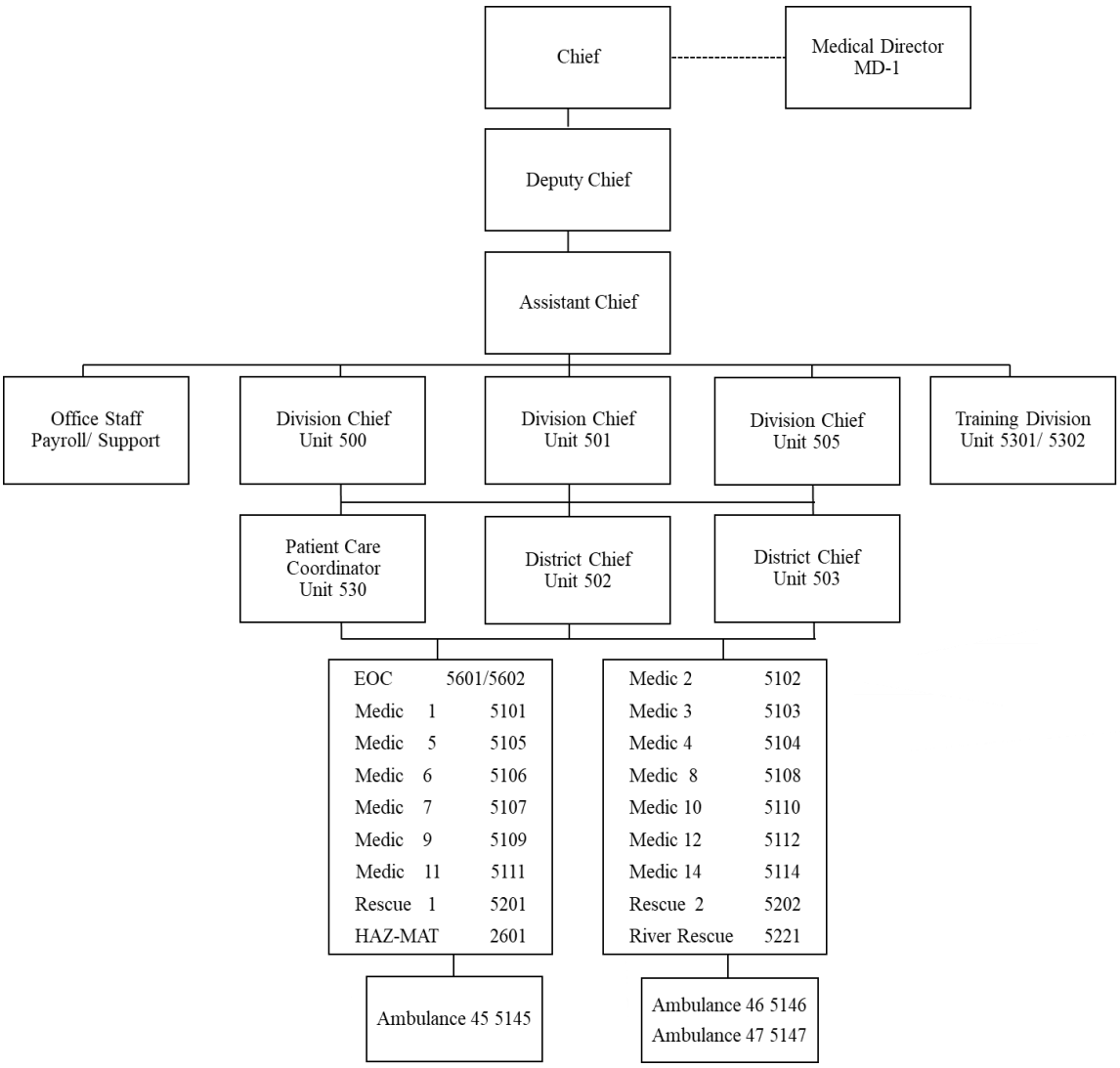
director offers direction and medical guidance for Pittsburgh EMS personnel, reviews statewide BLS and ALS medical protocols, and ensures personnel is trained accordingly.

The City's EMS physicians are on call 24/7, to supplement any needed assistance. The City is in partnership with the University of Pittsburgh Center for Emergency Medicine. Paramedics and EMTs can call into the center for a physician or resident assistance via radio. If needed, the physician will report on scene to assist with the treatment of a particularly critical patient. The physician vehicle carries medications and advanced equipment that ALS medic units are not issued or authorized to utilize. The physician can bring refrigerated blood, if it is needed for serious trauma.

Organizational Chart

As stated before, the Bureau of Emergency Medical Services consists of three divisions, the Ambulance Division, the Rescue Division, and the Training Division. Chart 1 shows the 2021 organization chart of Pittsburgh's EMS, along with the district number and their corresponding dispatch unit.

CHART 1
Department of Public Safety
Bureau of Emergency Medical Services
Organizational Chart
2021



Source: EMS Administration

Finding: The 2021 EMS organization chart does not clearly show the three divisions: Ambulance, Rescue, and Training, and that each division are overseen by a division chief. Under each division chief are district chiefs who oversee the crew chiefs that are on duty for all shifts at each Medic station. The special events operations are also not accounted for in this figure.

RECOMMENDATION 4:

Pittsburgh EMS administration should update their organizational chart to accurately depict EMS's three divisions, their staff, and include the crew chiefs, as well as the special events operations.

Demographics

The auditors realize that staffing is a very fluid situation. At the end of 2021, EMS administration reported to the auditors that the years of service of all personnel ranges from fewer than 6 months of service to 43 years of service. Pittsburgh EMS is 70.5% white males, 17.5% white females, 4.5% Black males, 4.5% Black females, and 3.0% unspecified. The ages of EMTs range from 25–35 years old, and paramedics aged from 35–50 years old.

The Table 2 shows the diversity of EMS at the end of 2021 as provided by the Department of Human Resources.

TABLE 2
Diversity of EMS
End of 2021

Race	Total	Percentage
White Male	134	67.3%
White Female	34	17.1%
Black Male	9	4.5%
Black Female	8	4.0%
Latino Male	2	1.0%
Asian Male	3	1.5%
2 or More Races Males	2	1.0%
Unspecified Race Male	5	2.5%
Unspecified Race Female	2	1.0%
Total	**199**	**100%**

Data Source: City of Pittsburgh's Department of Human Resources

Staffing Levels

EMS actual staffing levels were lower than the budgeted positions in 2021. Table 3 shows the staffing levels in 2021, as reported by EMS Administration and the budgeted positions outlined in the City of Pittsburgh Operating Budget for 2021. The 'shortage' column describes how many positions need to be filled to create a full force as compared to the operating budget.

TABLE 3
Staffing Levels for
EMTs, Paramedics, and Crew Chiefs
2021

Job Title	2021 Operating Budget Numbers	2021 Actual Numbers	Shortage
EMTs	28	24	4 (14.29%)
Paramedics	127	120	7 (5.51%)
Crew Chiefs	39	37	2 (5.13%)
Total	**194**	**181**	**13 (6.70%)**

Source: 2021 and 2023 Operating Budgets

When asked to verify the numbers that the EMS administration gave the auditors for staffing at the end of 2021, Human Resources reported staffing numbers of: EMTs 23, paramedics 123, and crew chiefs 36 for a total of 182. Human Resources number was one number higher than what EMS administration provided. HR numbers are still less than the budgeted amounts.

Finding: In 2021, the Bureau of EMS had an overall shortage of 6.70% of its EMT's, Paramedics, and Crew Chiefs.

Staffing Shortages

Pittsburgh EMS staffing shortages of both paramedics and EMTs is part of a nationwide workforce shortage. A letter was written by the American Ambulance Association and the National Association of Emergency Medical Technicians to members of Congress in October 2021. The letter states, "... our nation's EMS system is facing a crippling workforce shortage, a long-term problem that has been building for more than a decade. It threatens to undermine our emergency 9-1-1 infrastructure and deserves urgent attention by the Congress." This nationwide shortage of paramedics and EMTs was exacerbated by the COVID-19 pandemic. The letter goes on to state that the need for additional national funding is critical for EMS to address paramedic and EMT training, recruitment, and advancement more directly. Congress can provide specific direction and funds to the Health Resources and Services Administration to help solve this workforce crisis.

The auditors contacted five other similar sized city EMS departments to determine if they had experienced staffing shortages over the past few years. These cities were: Columbus, OH, Baltimore, MD, Buffalo, NY, Cincinnati, OH and Cleveland, OH. Below are the two cities that responded:

Columbus, OH returned a phone call and stated that they did not have any staffing issues during COVID or otherwise however applicant recruitment was down. There was some overtime due to staff being quarantined, because they tested positive for COVID. It should also be noted that all firemen are EMT certified. Columbus also had three firemen deaths related to COVID.

Cleveland, OH's EMS reported via email, "Historically we have had about 20% annual turnover rate, but vacancies were able to be filled. Similar to police departments across the US, EMS services are seeing a decline in the number of applicants. There are less individuals enrolling in EMT/Paramedic programs. During COVID, there was a larger decline in the number of applicants as EMS was on the forefront of the pandemic. There is an increase in overtime, but it has been to the point where individuals will not work the available overtime."

The auditors interpreted that Cleveland is experiencing staffing shortages because overtime is being exhausted and not enough staff willing to work more overtime.

RECOMMENDATION 5:

The EMS administration should work with the Office of Management and Budget and members of City Council to keep Pittsburgh's EMS services adequately staffed. Recruitment efforts through high schools, local colleges, and, if possible, financial incentives should be explored. Signing bonuses are given in many professions and this may be something that can be used to enlist EMTs and paramedics. In the future, as applications increase, the hiring of a more diversified staff should be a goal.

Shift Schedule

The standard shift EMTs and paramedics are scheduled for are 12-hour shifts. These shifts normally are 6 a.m. – 6 p.m., and the second shift is 6 p.m. – 6 a.m. Every EMS station has eight assigned medics; four medics work in a 24-hour span (two 12-hour shifts), while the other four have off. There are two medics assigned to work every shift. The schedule for paramedics and EMTs is called a Panama schedule, which is working for two days, off for two days, and then working for three days. This cycle repeats, totaling seven shifts every 14 days. Part of this rotating schedule requires EMS personnel to work weekends and holidays. As per the paramedic contract, if their regular day falls on a holiday, personnel will receive double time and a half.

As Table 3 shows, EMS has a total of 13 open crew chiefs, paramedics and EMTs positions, per the 2021 operating budget. These job vacancies have caused the normal 12-hour shifts to be extended to 18-hour shifts, causing an additional six hours of overtime, which increases overtime costs and exhausts employees.

EMS Districts

The City is divided into 12 EMS districts, providing coverage for numerous neighborhoods. Medic units are numbered 1 through 14 (there is no medic #13). Each district station contains an ALS medic unit, and three stations have an additional BLS ambulance. ALS medic units are staffed by paramedics, who are certified to administer medications for a variety of conditions including: chest pain, trouble breathing, heart failure, emphysema and more. Medic units are equipped with advanced medical equipment such as airway equipment, cardiac life support, and cardiac monitors. Paramedics can interchangeably work on either a medic unit or

rescue trucks and can respond to numerous different types of calls, including calls from specialty teams.

BLS ambulances are not equipped with advanced medical equipment and are staffed by EMTs who cannot administer medications. EMTs provide medical assessment, triage, monitoring, treatment, transportation, and observation of patients.

The City's 13 medic units and three BLS ambulances service the entire City from 7 a.m. to 11 p.m., while a reduced number of units run from 11 p.m. to 7 a.m. Calls are dispatched based on the location of the emergency and the availability of the medics. Medic 5, Medic 7, and Medic 12 share a station with the Bureau of Fire. Table 4 shows the City's medic units and their surrounding neighborhoods; EMS only has 12 stations, while the Bureau of Fire has 30 firehouses.

TABLE 4
Medic Units and District Neighborhoods

Medic Units	District and Neighborhoods
Medic 1, Medic 11	Homewood, Lincoln/Lemington, Larimer, East Liberty, Highland Park
Medic 2/Amb* 47	Knoxville, Bon Air, Allentown, Mt. Oliver, Carrick, Brookline, Overbrook
Medic 3/Amb* 46	West End Valley, Beechview, Banksville, Greentree City, Mt. Washington, Oakwood, Westwood, East Carnegie, Elliot, Sheraden, Chartiers City
Medic 4	Lower North Side, Mt. Troy, Northview Heights, Pineview, Cityview, Mexican War Streets, Perry South
Medic 5	Lower, Middle, and Upper Hill, South and Central Oakland, Polish Hill
Medic 6/Amb* 45	Garfield, Lawrenceville, Bloomfield, Highland Park, Stanton Heights, Morningside
Medic 7	Greenfield, Squirrel Hill South, Schenley Park, Panther Hollow, Hazelwood, Swisshelm Park
Medic 8	Beltzhoover, Mt. Washington, South Side Flats and Slopes, Arlington and Arlington Heights
Medic 9	Shadyside, North Oakland, Bloomfield, East Liberty/ Penn Circle
Medic 10	Marshall-Shadeland, Manchester, Brighton Heights, Observatory Hill, Perry North, Summer Hill
Medic 12	Hays, Lincoln Place, St. Clair Village, Hazelwood, Glen Hazel, New Homestead
Medic 14	Downtown, Uptown, Station Square, Bluff
Rescue 1	All neighborhoods inside the rivers except downtown
Rescue 2	All neighborhoods outside the rivers plus downtown

Source: EMS administration and EMS website
*AMB = BLS ambulances

Map 1 shows <u>both</u> EMS and firehouse stations throughout the City because some medic stations share their location with firehouses. Three medic stations also house ambulances: Medic 6 houses Ambulance 45, Medic 3 houses Ambulance 46, and Medic 2 houses Ambulance 47.

The blue dots represent EMS stations, and the red dots are firehouses. (NOTE: Medics 5, 7, and 12 are in a firehouse and therefore are not displayed as a blue medic station, but a red fire station.) This map also shows River Rescue, EMS training, EMS headquarters, and Fire headquarters.

MAP 1
EMS and Fire Stations,
Headquarters, River Rescue, and
EMS Training Locations

Source: City of Pittsburgh GIS Interactive Maps

RECOMMENDATION 6:

EMS administration should work with I&P to add a map with addresses of all medic station locations on EMS's website. It can be found on the Department of City Planning website. This would help City residents to see where services are located.

EMS Supply Depot

Pittsburgh EMS has its own supply depot located in the basement of EMS Headquarters in the Shadyside neighborhood. The EMS supply manager records and updates the supply inventory daily, and determines which supplies need to be ordered accordingly. Prior to placing an order, all supply orders need approval either from the Chief or Deputy Chief.

Paramedics and EMTs use a software program called EMS 2000 in each medic unit and ambulance to send a requisition to the supply manager to replace supplies used during their shift. Supplies not immediately needed are delivered in the morning via a driver or can be picked up at the depot. For supplies immediately needed, EMS units will pick them up from the depot. Crew Chiefs are responsible for ordering items used in EMS stations.

Supplies stored and delivered from the warehouses are the following: Band-Aids, endotracheal tubes, defibrillator pads, electrodes, needles, IV catheters, medications, suction catheters, IV fluids, batteries, blood pressure cuffs, oxygen delivery devices, and many other medical and non-medical supplies.

When EMS has a transport to the hospital, they can replenish some supplies from the hospital such as linens, gauze/tape, and most drugs that were used during the transport. They do not replace specialty drugs or equipment, as these can be very expensive to replace.

According to EMS administration, there is no formal agreement with hospitals for restocking. This is a courtesy between Pittsburgh EMS and the hospitals. Each hospital offers different supplies, and if the hospital does not have a certain product that day, then paramedics and EMTs will resupply at the medic station or supply depot. The auditors witnessed this practice during their ride along trips with the paramedics.

Allegheny County 911 Communications Center

On January 1, 2005, the City's 911 Center merged with Allegheny County's 911 Center, which is now called the Allegheny County 911 Communications Center. An agreement was entered into outlining the consolidation plan. The Department is under Allegheny County's Legal and Public Safety Division. The 911 Center is responsible for dispatching EMS services to 111 of the 130 municipalities within Allegheny County, including the City of Pittsburgh. The other 19 municipalities dispatch their own police, fire and EMS services. A list of these 19 other municipalities can be found in the Appendix as Exhibit B.

The City of Pittsburgh is divided into five zones: East, West, North, South, and Central. The central business district of the City is in the central zone. The 911 Communications Center is staffed 24 hours per day, seven days per week. The 911 Center relocated from the City of Pittsburgh's Point Breeze neighborhood to Moon Township in 2019.

When a call comes into the 911 Center, the 911 telecommunications officer asks the caller to identify which municipality they are calling from. The officer then dispatches the nearest EMS unit to the location the caller specifies. If the closest medic is on another call, the next closest EMS medic will be contacted.

The Allegheny County 911 Communications Center uses a universal computerized system called Medical Priority Dispatch System (MPDS) to assist in dispatching medical emergencies. Each call is based on standardized questions to determine its priority status and then assigned a code. This removes human bias and reactions and allows emergency medical service providers to determine the appropriate response.

The MPDS transfers all information into the EMS CAD system. The patient care coordinator stated that the information contained on MPDS is the same that is on the CAD system. The auditors used EMS CAD reporting system for all analysis.

A coded priority number is assigned based on responses to the given questions. There are six categories: E0, E1, E2, E3, E4, and E5. E0s are high-priority, life-threatening calls, E1 is a serious health threat, and E2 and E3 are health issues that are minor in nature. Calls labeled E4 and E5 are considered low-priority calls. Examples of each category are explained later in this audit.

City of Pittsburgh firefighters, because they are first responders, are also dispatched by the Allegheny County 911 Communications Center for all E0 and E1 calls simultaneously. They provide prompt basic life support while awaiting an ALS medic unit to arrive on the scene. The chief, the district chief, a physician, and/or the medical director may also respond to life-threatening calls such as a car accidents, cardiac arrest, or severe trauma.

Forced entry is used by EMS when they are called to a structure for a life-threatening emergency and the patient is incapacitated and cannot let the paramedics or EMTs in. According to the patient care coordinator EMS personnel make the minimal amount of destruction to get into the property. Pittsburgh EMS reported 61 instances of forced entry occurrences in 2021.

Pittsburgh's EMS generates its own more detailed report through its EMS Charts System, first put into operation in March 2013, EMS Charts is a prehospital patient care report system, that records the care EMS personnel on the medic unit or ambulance provides each patient. Each unit is responsible for entering data to their patient's care report (PCR). An example of a PCR can be found in the Appendix as Exhibit C. EMS and hospital reports do not interface with one another.

Computer Aided Dispatch Call Data

The telecommunications officer answers the emergency call, identifies the status of the patient, their location, and which EMS unit is available to respond to the emergency. This information is recorded in the CAD database system.

CAD Data

The CAD data the auditors received contains the following information for each call received: Case Number, Entry Date, Call Type, EMS District, Neighborhood, Dispatch Unit, *Entry Time, Dispatch Time, Enroute Time, On Scene Time, Transport Time, At Hospital Time, Close Time*, Hospital and Priority Code. The italicized names are all "time-related" data categories that the auditors used to analyze response time calculations later in this audit.

The EMS patient care coordinator explained the data entries terminology as follows:

"*Entry time*" is the time when the communications officer answers the 911 call and enters the information provided by the caller.

"*Dispatch time*" is the time when the communications officer dispatches the medic unit or ambulance on the radio to respond to the incident.

"*Enroute Time"* is the time the ambulance leaves the station and arrive at the emergency scene.

"On Scene Time" is the time spent at the emergency scene.

"Transport Time" is the time when the EMS unit leaves the scene and transports the patient to the hospital.

"At Hospital Time" is the time the EMS unit arrives at the hospital, processes and registers the patient for admission into the emergency department.

If the patient is in critical condition, then registration is bypassed, and the patient is taken directly to the patient examination room. Formal registration is then done later when the patient is stable, or by a family member who followed the ambulance.

After registration, the paramedics and EMTs will wait for a room assignment for the patient, typically 3-5 minutes. This is because they must provide care until the hospital formally takes over the care and responsibility of the patient. Increasingly, emergency room assignments take 10-15 minutes due to over-crowded emergency departments.

After the patient is assigned to an emergency room, the crew must provide a verbal and written transfer of care report to the receiving nurse. Once the transfer of care report is given to

the nurse, the crew will start the process of preparing the medic unit or ambulance for their next call, a process that requires the following tasks:

- Decontaminating the stretcher, equipment, and the back of the medic unit or ambulance by wiping down with sanitizing wipes and/or washing with sanitizing solution.
- After sanitizing and drying, equipment is returned to its proper place on the medic unit or ambulance.
- Clean linen and blankets from the hospital are placed back on the stretcher and returned to medic unit or ambulance.
- Crew members will gather replacement supplies (if available from the hospital; not all hospitals provide replacement supplies or carry all types of supplies utilized).
- If any controlled substances or supplies not resupplied at the hospital are needed, the crews will notify the on-duty District Chief for resupply.

"*Close time,"* is when a crewmember will contact the 911 Allegheny Call Center to report that they are available for another call.

Call Types

There were 83,901 emergency calls received by EMS from January 1, 2021, to December 31, 2021. This includes all medic units, ambulances and rescue trucks. This averages about 229.87 calls per day, or 17.68 calls per station per day. There are 57 call types included in the CAD data are from the Allegheny County 911 Center, and are listed below:

Abdominal Pain	Chest Pain	Fire- Commercial Building	Seizure Patient
Accident	Choking Emergency	Fire- Residential	Service
Accident w/Injury	COVID Detail	Flood Emergency	Shooting Incident
Accident w/Injury & Entrapment	COVID Training Testing	Head Injury	Sick Person
AIDE	Detail	Heart Problem	Special Event Detail
Allergic Reaction	Diabetic Emergency	Insect/Animal Bite	Stroke
Assault	DOA Obvious Death	Mass Casualty Incident	SWAT/EMS
Assist Police with a Shotspotter	DOA- Terminal Illness	Medical/Rescue Assist	Traumatic Injury
Back Pain/Injury	Drowning	OB/GYN Emergency	TRNE
Bleeding	Electrocution	Poisoning/Overdose	Unknown Problem
Boat Emergency	Elevator Emergency	Priority Emergency Dispatch	Water Rescue
Breathing Emergency	Eye Injury	Psychiatric Emergency	Welfare Check
Building Collapse	Fainting	Request for Assistance	
Burn Emergency	Fall Emergency	River Rescue Patrol	
Carbon Monoxide Emergency	Fever	River Rescue Training Drive	

"Sick person", is considered a general illness, or a condition that cannot be accurately described by any of the other call types. This category has the highest number of occurrences with 14,704 (25.89% of the 83,901 total calls dispatched) in 2021. "Breathing emergency" calls were second with 7,911, with "fall emergency" calls third at 7,077.

The auditors analyzed the dispatched call types to determine which had the highest volume. Table 5 shows the top 10 highest volume dispatched call types in 2021.

TABLE 5
Top Ten Highest Volume of Dispatched Call Types in Descending Order
2021

Call Types	Number of Calls Dispatched
Sick Person	14,704
Breathing Emergency	7,911
Fall Emergency	7,077
Accident	5,957
Fainting	4,959
Chest Pain	3,732
Unknown Problem	3,500
Accident w/ Entrapment	3,386
Poisoning/Overdose	2,983
Bleeding	2,585
Total	**56,794**

Data Source: EMS 2021 CAD Data

The top 10 call type adds up to 56,794 which is 67.69% of the total 83,901 dispatched calls.

Finding: The top ten call types represent 67.69% of all the calls.

As stated before, the dispatcher assigns the level of priority to all calls. Of the 14,704 "sick person" calls, the dispatcher assigned priority E3 to 6,218 or 42.29%; priority code E2 had 3,825 "sick person" calls; priority code E1 was assigned to 3,815 of the "sick person" calls; priority code E was assigned to 834 of the "sick person" calls; and priority code E4 had 12 calls.

Neighborhoods and Call Volume

For all call types, Table 6 shows the top ten neighborhoods throughout the City that had the most dispatched calls for EMS in 2021. Downtown had the highest volume of calls with 6,376 (almost double the amount of the next neighborhood), followed by Carrick 3,463 and then the Southside Flats at 3,210. The complete list of calls per neighborhoods is listed in the Appendix as Exhibit D.

TABLE 6
Top Ten Neighborhoods
with the Highest Number of EMS Calls
in Descending Order
2021

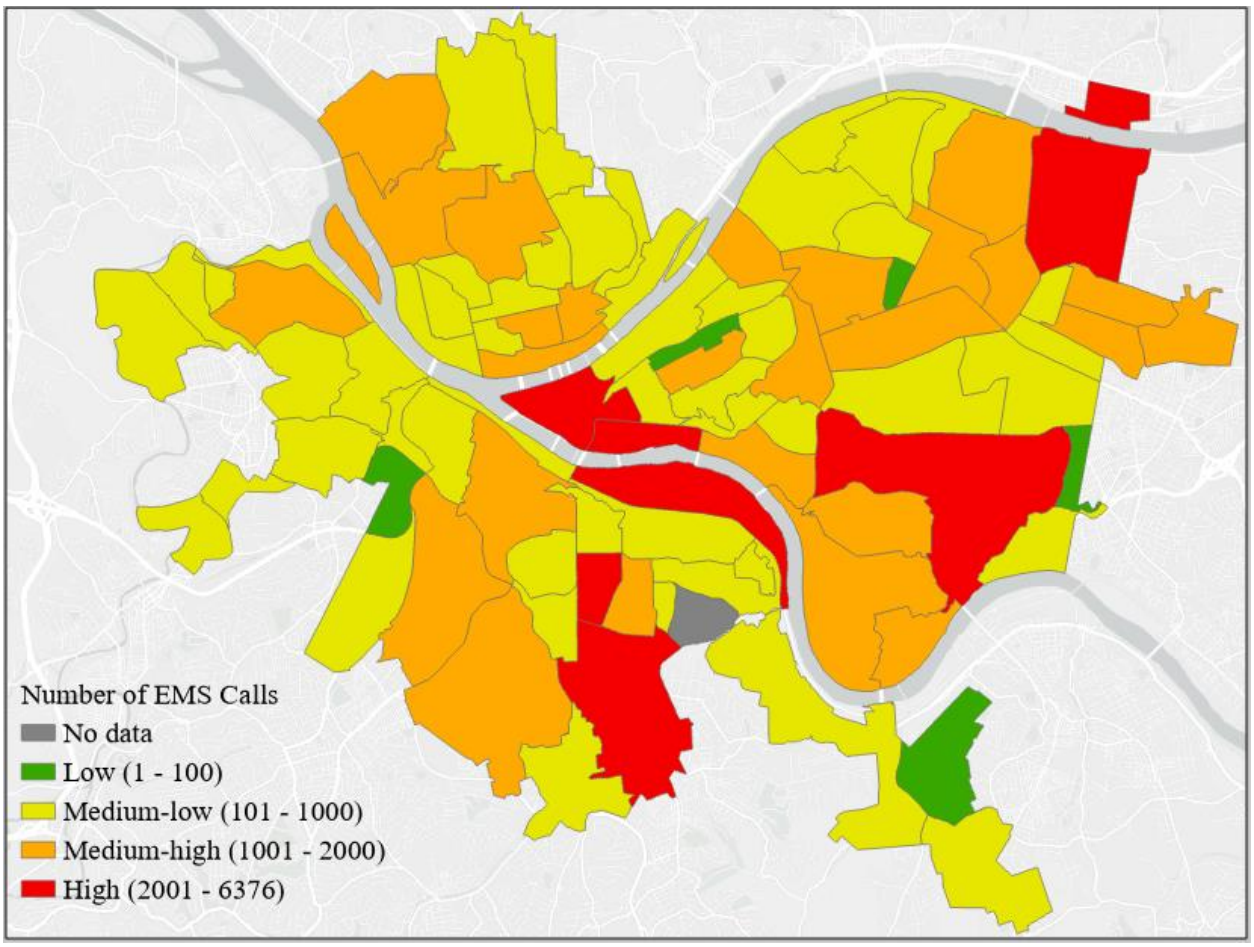
Neighborhood	Number of Calls
Downtown	6,376
Carrick	3,463
Southside Flats	3,210
Bluff	2,356
Squirrel Hill South	2,226
Knoxville	2,121
Brookline	1,991
Middle Hill	1,958
Shadyside	1,943
Oakland North	1,887
Total	**27,531**

Data Source: 2021 CAD data

Finding: The Downtown neighborhood had the highest number of calls for EMS in 2021 with 6,376. This is 7.59% of the yearly 83,901 total calls.

Map 2 shows the levels of 911 EMS call volume by City neighborhoods of the City of Pittsburgh in 2021.

MAP 2
Number of EMS Calls per Neighborhood
2021



Data source: 2021 CAD data

The map describes the total number of calls per neighborhood as reported in the CAD data. A map of the neighborhoods is listed in the Appendix as Exhibit E.

Call Volume by Unit

Medic unit numbers are identified by four-digit numbers. The first two digits (51) identify that the unit is a medic unit (and not a rescue unit) while the last two digits of the unit number are the Medic District number. For example, Medic #5110 is Medic 10.

According to an EMSWORLD national publication, titled *Ambulance Allocation: What's the Right Balance?*, February 7, 2020, by Aditya C. Shekhar, states that ". . . a community with too few staffed EMS units risks overworked providers and not having adequate coverage to meet the demand of constituents. In these under resourced communities, crews will likely spend significant portions of their shifts running calls, possibly leading to burnout and high turnover."

Table 7 shows the number of calls the 13 medic units, three ambulances, and two rescue trucks made in 2021. The top three EMS units with the most dispatched calls in 2021 were Medic unit #5114 had the most calls at 5,171, with Medic unit #5105, second with 5,035, with ambulance #5146 a close third. Rescue trucks #5202 had 4,492 calls and #5201 had 4,016 calls.

Table 7 does not include calls of specialty units such as SWAT, HazMat, Motorcycle and River Rescue.

TABLE 7
Number of Calls Dispatched per
Medic Units, Ambulances, and Rescue Trucks
In Descending Order
in 2021

EMS Unit	Number of Calls Dispatched
5114	5,171
5105	5,035
5146	4,985
5103	4,753
5104	4,692
5102	4,691
5145	4,645
5108	4,555
5202	4,492
5110	4,108
5101	4,086
5106	4,048
5109	4,040
5201	4,016
5111	3,743
5107	3,407
5112	3,085
5147	2,186
Total	**75,738**

Data source: 2021 CAD data

Finding: The top three medic units with the most 911 calls in 2021 are: #5114, #5105 and #5146. Medic #5114 is in the downtown, Uptown, Station Square, Bluff areas of the City and has the highest number of calls with 5,171. Medic #5105 services the Lower, Middle, and Upper Hill, South and Central Oakland, Polish Hill and has the second highest number of calls with 5,053, and Ambulance #5146 is in the West End Valley, Beechview, Banksville, Greentree City, Mt. Washington, Oakwood, Westwood, East Carnegie, Elliot, Sheraden, Chartiers City areas and has the third most calls with 4,985.

Transportation to Hospitals

Not all patients are transported to a hospital, however, most transport decisions are based on the patient's request. EMS transported 40,508 or 48.2% of its 83,901 calls to the hospital in 2021. EMS transports patients to many different hospitals in or out of the City limits; the hospital selection can be dependent on the urgency or specialty care needed (e.g. burn unit) for immediate attention.

There are three state-certified level-1 adult trauma centers in Pittsburgh which are University of Pittsburgh Medical Center (UPMC) Presbyterian in Oakland neighborhood, UPMC Mercy in Uptown/Crawford-Roberts neighborhood, and Allegheny General Hospital (AGH) in the North Side East Allegheny neighborhood. The City of Pittsburgh also has one level-1 pediatric trauma center which is UPMC's Children's Hospital. Below is a list of all hospitals that EMS is authorized to transport patients.

Allegheny General Hospital	St. Clair
Brentwood *	UPMC Magee
Children's Hospital	UPMC Mercy
Jefferson Regional	UPMC Presbyterian
Ohio Valley	UPMC Shadyside
Passavant Hospital *	VA (Veterans Affairs) Oakland
St. Margaret	West Penn Hospital

*The asterisked hospitals received no patients from City EMS in 2021.

Data showed EMS transported most patients to UPMC Mercy in 2021. Table 8 shows the top 10 hospitals patients were transported to by Pittsburgh's EMS in 2021 in descending order.

TABLE 8
Top 10 Patient Hospitals
in 2021

Hospitals	Transports
UPMC Mercy	12,203
UPMC Shadyside	6,966
Allegheny General	6,640
UPMC Presbyterian	6,223
West Penn	2,383
UPMC Magee	1,537
UPMC Children's	1,460
St. Clair	838
VA Hospital	750
St. Margaret	534
Total	**39,534**

Data Source: 2021 CAD data

UPMC Mercy Hospital received the most EMS transports which is almost double the next highest hospital received. This averages out to UPMC Mercy receiving 33 transports from Pittsburgh EMS per day. According to the CAD data, of the 12,203 calls transported to UPMC Mercy, 6,680 calls were labeled high priority levels E0 and E1, which was over half of the transports.

Finding: UPMC Mercy Hospital in the Uptown/Crawford-Roberts neighborhood, received the highest number of Pittsburgh EMS transports in 2021, corresponding to the downtown area having the highest number of 911 calls.

Priority Codes

The auditors received a copy of EMS's 2021 CAD data to compile statistics and report response times for calls dispatched for the two highest priority levels, E0 and E1. These two levels produced four category call types: Overdose/Poisoning, Trauma, Cardiac Emergencies, and Stroke.

Priority codes are assigned by MPDS from a series of questions asked. Priority codes are used to determine which medic units need to be dispatched. Ideally, ALS units should only be dispatched when there is a life-threatening, high-priority emergency call, and BLS units should be dispatched when non-life-threatening, lower-priority emergencies are called in.

The Pittsburgh EMS priority codes are described as followed:

> **E0** = The highest emergency priority response with lights and sirens. Triggers more than one vehicle response (typically an ALS unit and a Rescue Truck).
> **E1** = Next level, still a high priority. Triggers an ALS response with lights and sirens.
> **E2** = Next level, moderate priority response with lights and sirens, preferably an ALS response a BLS unit could be used.
> **E3** = Low priority call, no lights or sirens. This is a BLS response, however it can be given to an ALS unit if there are no BLS units available.
> **E4** = Very low priority, typically a call for lift assistance. BLS sent, or first responders preferable before an ALS unit is requested.
> **E5** = Low to no priority, a public service request. This is usually a call for needle pickup.

Table 9 shows the total number of each priority code reported in 2021. As shown, priority code E2 was reported the most, closely followed by E0 priority code.

TABLE 9
CAD Data Record of
Number of each Priority Code
in 2021

Priority Code	Total	Percentage
E0	24,136	28.77%
E1	19,401	23.12%
E2	24,248	28.90%
E3	14,522	17.31%
E4	40	0.05%
E5	1,554	1.85%
Total	**83,901**	**100%**

Data Source: 2021 CAD Data

Table 9 shows that Priority E2 calls have the highest number of calls with 24,248. Pittsburgh EMS recorded 24,136 Priority E0 calls and 19,401 Priority E1 calls, for a total of 43,537 or 51.89% of all calls. Priority code E4 was reported significantly less than the other priority codes with 40 calls in 2021 consisting of 18 flood emergencies, 12 sick persons, and 10 fall emergencies.

Finding: Table 9 shows that E0 and E1 type calls combined have a total of 43,537, which is 51.89% of all calls.

2021 EMS Response Times

There are no federal or state laws regarding response times for EMS agencies. However, the National Fire Protection Association (NFPA) Standard 1710 regarding emergency medical service response times states that first responders and BLS units should arrive on scene within a 4-minute time frame 90% of the time for all incidents (Section 5.3.3.4.2). The NFPA also states that an ALS crew should respond within 8 minutes for priority (E0, E1) calls (Section 5.3.3.4.2); this is considered the "gold standard" though it is not legally binding. The auditors used an 8-minute and 59 second response time as a generally accepted standard response time to remain consistent with two prior City Controller's Audits in 2008 and 2014.

It should be mentioned that every call dispatched is unique, no matter the call type or priority level. Pittsburgh EMS paramedics and EMTs use their experience and knowledge to determine the response needed.

Response Times for Overdose, Trauma, Cardiac Emergencies, and Stroke

Pittsburgh EMS categorizes calls into 57 different call categories, many of which can be severe and life-threatening. The auditors focused on four specific severe medical conditions to

determine if the response times remained under the 8 minutes and 59 seconds standard for ALS response times.

Response times were analyzed for the following four medical conditions: overdose/poisoning, trauma, cardiac emergencies, and stroke. Only high priority codes E0 and E1 were analyzed as ALS medic units would be responding as quickly as possible for severe life-threatening emergencies. Only medic units were analyzed; rescue trucks, and special operations vehicles were not included.

MDPS classifies overdoses with poisonings (Poisoning/Overdose) as overdosing is a type of poisoning. Trauma was analyzed by using the call types labeled in the CAD data as, "Accident w/ Injury and Entrapment", "Assault", "Head Injury", "Shooting Incident", and "Traumatic Injury". Cardiac emergencies were determined using the call types, "Chest Pain", and "Heart Problems". Stroke was labeled as such.

Table 10A-10D shows the response times for the four top severe medical conditions EMS responded to in 2021. "Null calls" are cancelled dispatches where the ALS medic unit does not arrive at the scene, therefore having no response time.

TABLE 10A-10D
High Priority ALS Medic Unit
Dispatch to On Scene Arrival
Response Times
for Overdose, Trauma, Cardiac Emergencies,
and Stroke in 2021

TABLE 10A

Overdose/Poisoning		
Minute Range	**Number**	**Percent**
Less Than 8:59	827	50.15%
9:00 – 14:59	403	24.44%
15:00 – 29:59	74	4.49%
Over 30:00	6	0.36%
Null Calls	339	20.56%
Total Calls	1,649	100%
Average Response Time	**8:35**	

TABLE 10B

Trauma*		
Minute Range	**Number**	**Percent**
Less Than 8:59	507	48.65%
9:00 – 14:59	206	19.77%
15:00 – 29:59	48	4.61%
Over 30:00	8	0.77%
Null Calls	273	26.20%
Total Calls	1,042	100%
Average Response Time	**8:53**	

TABLE 10A-10D (continued)
High Priority ALS Medic Unit
Dispatch to On Scene Arrival
Response Times
for Overdose, Trauma, Cardiac Arrest,
and Stroke in 2021

TABLE 10C

Stroke		
Minute Range	**Number**	**Percent**
Less Than 8:59	414	43.67%
9:00 – 14:59	345	36.50%
15:00 – 29:59	76	8.12%
Over 30:00	14	1.59%
Null Calls	99	10.12%
Total Calls	948	100%
Average Response Time	**10:03**	

TABLE 10D

Cardiac Emergencies**		
Minute Range	**Number**	**Percent**
Less Than 8:59	1,922	44.61%
9:00 – 14:59	1,421	32.99%
15:00 – 29:59	386	8.96%
Over 30:00	72	1.67%
Null Calls	507	11.77%
Total Calls	4,308	100%
Average Response Time	**10:13**	

Data source: 2021 CAD data
* Accident w/ Entrapment, Assault, Head Injury, Shooting Incident, and Traumatic Injury
** Cardiac Arrest, Chest Pain, and Heart Problem

Finding: In 2021 the averaged response time for the four high priority ALS medic unit calls was 9 minutes and 26 seconds. Two of the above categories, overdose/poisoning and trauma averaged under the 8 minute and 59 seconds recommendation for ALS medic units.

RECOMMENDATION 7:

EMS administration should work to improve the response times for high-priority calls to meet the suggested standard response time of 8 minutes and 59 seconds. This includes cardiac emergencies and stroke patients' response times; averages were over a minute more than the suggested standard.

Overdoses Statistics

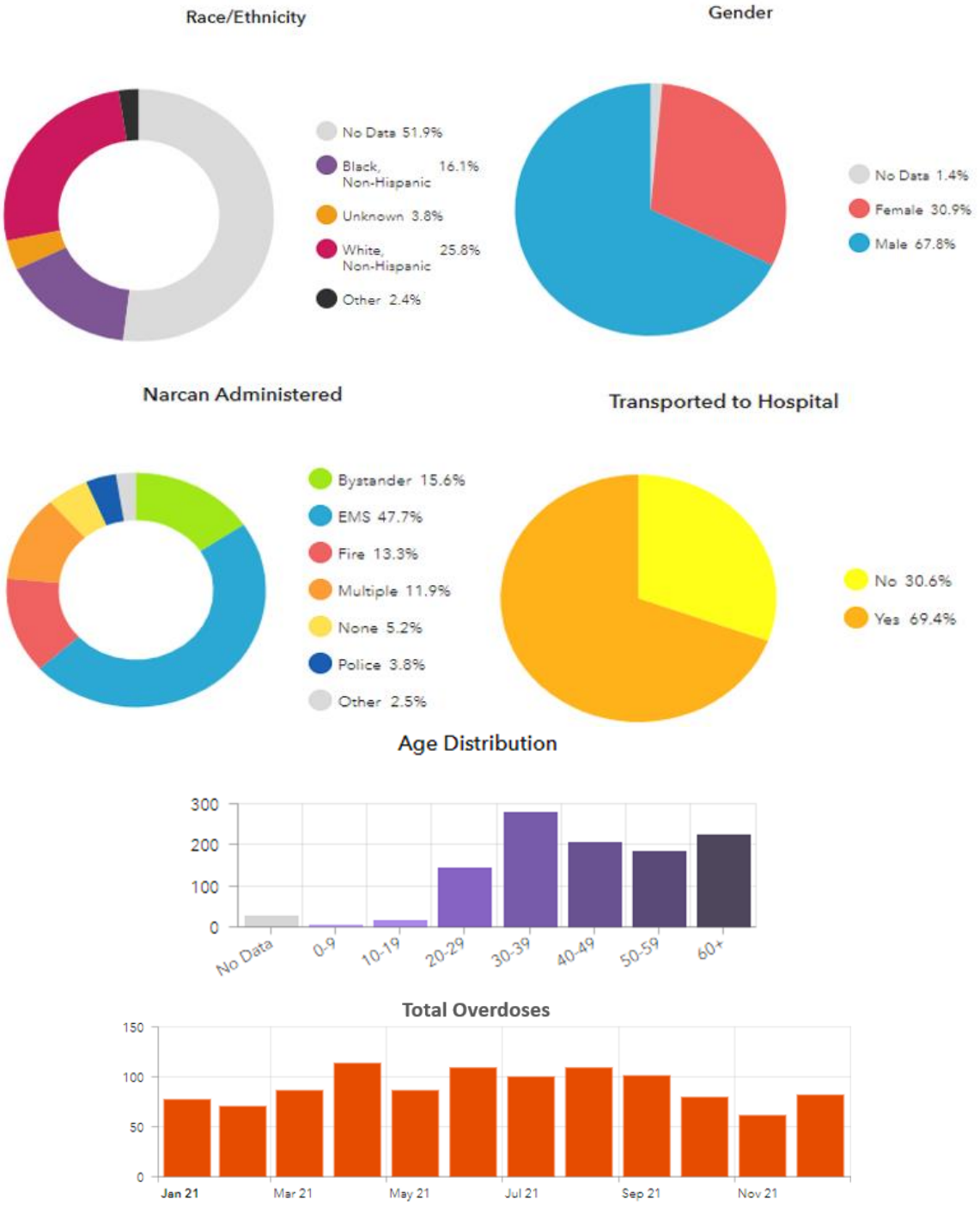
Out of the four call types analyzed in the CAD data for 2021, there was a total of 1,642 poisoning/overdose calls which were responded to in an average of 8 minutes and 35 seconds, as seen in Table 10A.

A press release published by the Centers for Disease Control and Prevention (CDC) in December 2020 reported that overdoses were increasing in 2019, before COVID-19 spread across the United States. Furthermore, a steady acceleration of overdose deaths occurred during the pandemic. Those with substance abuse issues did not cope well with the disruption of life from the pandemic and therefore were more susceptible to overdosing. The CDC's National Center for Health Statistics shows that overdoses have increased significantly over the last half a decade, synthetic opioids (primarily manufactured fentanyl) have the highest overdose death rate.

The City of Pittsburgh's Opioid Overdose Dashboard shows the race/ethnicity, gender, age distribution and transportation to hospital, The dashboard also shows the total number of overdoses per month/year and if Narcan was administered. Narcan (brand name Naloxone) is a prescription nasal spray used to reverse the overdose of opioids by blocking their effects. This data is provided by Pittsburgh EMS and is gathered, analyzed, and updated monthly by the City's Office of Community Health and Safety. All data is compiled from the electronic patient care report (PCR) software, and EMS Charts.

According to the City's Opioid Overdose Dashboard, in 2021 there were a total of 1,076 overdoses. (This number differs from 1,642 because 'poisoning' is not included on the Dashboard.). April 2021 had the highest number of overdoses at 114, followed by June and August, both with 109 overdoses each. White men ages 30-39 had the highest number of overdoses in 2021. The opioid overdose dashboard does not report the number of deaths caused from overdosing; the Bureau of EMS does not track the deaths of patients. Chart 2 shows the demographics for overdoses in Pittsburgh in 2021 taken directly from the City of Pittsburgh's Opioid Overdose Dashboard.

CHART 2
Demographics for Overdoses in Pittsburgh
2021



Source: City of Pittsburgh Opioid Overdose Database

The EMS dashboard shows that there was a total of 1,076 reported overdoses in 2021. Not all overdoses receive Narcan, and for the patients that do receive Narcan, it can be administered by any individual. Of the reported overdoses, 513 (47.7%) received Narcan from

Pittsburgh EMS; 184 (17.1%) were administered Narcan by fire fighters and police, 168 (15.6%) were administered Narcan by bystanders, 128 (11.9%) received Narcan by multiple sources, 27 (2.5%) were labeled as other, and 56 (5.2%) overdose patients did not receive Narcan.

The dashboard reports that 60.7% of overdose patients were not transported to the hospital. However, when Narcan was administered by Pittsburgh EMS, 80.5% of overdoses were transported to the hospital. Overdose patients taken to the hospital have the benefit of a smoother detox period and have access to additional support services, such as mental health support, Narcan, access recovery supports, and securing stable housing.

Overdose Witnessed on Medic Unit Ride Along

When on a medic unit ride along, an auditor witnessed an overdose. When the medic unit arrived, paramedics conducted a primary assessment on scene and determined the patient was having an overdose. The paramedics did not administer Narcan, as the patient has good pulse and was breathing. According to EMS paramedics, when a patient has a good pulse and is breathing, it is best to ease them out of the high slowly with supplementing oxygen. Narcan immediately brings a patient out of the high, which can be very painful, causing them to become sick or violent. Narcan is only administered when a patient is in very critical condition such as having a weak or no pulse (weak is defined as a pulse less than six beats per minute) and/or not breathing.

Traumatic Injury Statistics

A trauma is a serious physical injury that requires immediate medical attention. The auditors determined the traumatic injury response time based off five call types as labeled in the CAD data: accident with injury and entrapment, assault, head injury, shooting injury and traumatic injury. In 2021, the average response times for trauma calls was 9 minutes and 20 seconds for the 1,042 calls, shown in Table 10B.

Table 11 shows the total number of calls for each category in the trauma data.

TABLE 11
Total Number of Calls for Trauma
2021

Call Type	Number of Calls	Percentage
Accident with Injury & Entrapment	32	3.07%
Assault	117	11.23%
Head Injury	241	23.13%
Shooting Incident	521	50.00%
Traumatic Injury	131	12.57%
Total	**1,042**	**100%**

Data source: 2021 CAD data

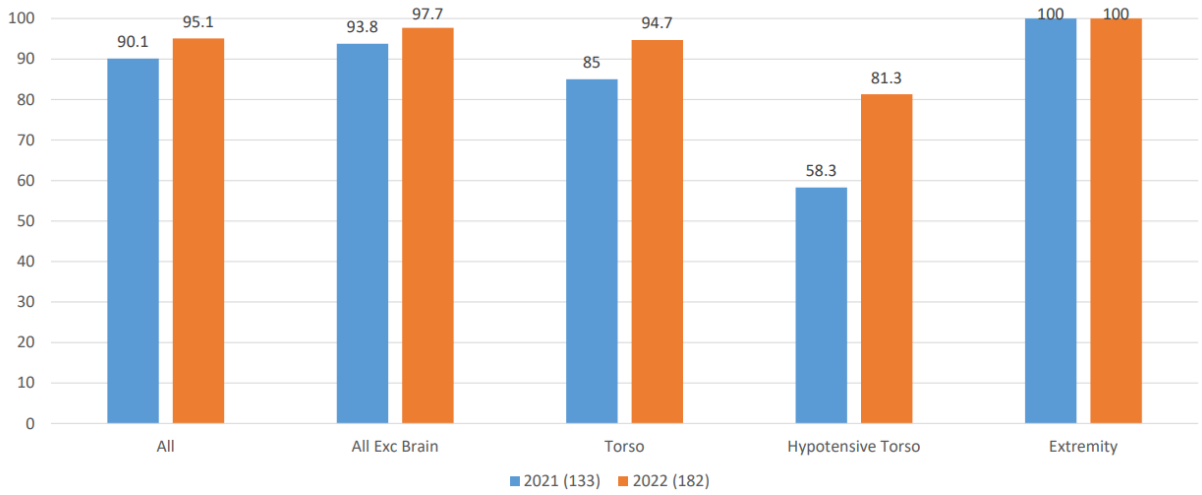
Finding: In 2021, 50% of all Trauma responses were for shooting incidents; the next highest at 23.13% were Head Injuries.

Penetrating Trauma

Penetrating trauma is not included in the CAD database, but it is tracked by EMS administration. A Pittsburgh EMS assistant chief provided Graph 1, which shows the percent of individuals that survived penetrating trauma in 2021 and 2022. The auditors researched the meaning of the given categories as All (total combined), All Excluding Brain (e.g. patients shot in the head), Torso (injuries related to the chest or abdomen), Hypotensive Torso (a sudden drop in blood pressure, which could possibly be due to blood loss), and Extremity (injury to limbs of the body such as arms and legs).

In 2021, EMS had 133 cases of penetrating trauma and in 2022, EMS had 182 cases. This is an increase of 49 cases.

GRAPH 1
Pittsburgh EMS
Percent of Penetrating Trauma Survival
2021 vs. 2022



Source: EMS Administration

Stroke Statistics

A stroke is a very serious medical condition that needs to be treated as quickly as possible. There are two types of strokes. An ischemic stroke is the most common type and occurs when there is a clot in the brain that blocks blood flow, EMS paramedics perform reperfusion therapy which is the administration of a blood thinning medication. This breaks up the clot and helps restore blood flow. A hemorrhagic stroke is when a vessel bursts in the brain, causing the brain to bleed, which then limits oxygen to the brain. For hemorrhagic strokes, a CT scan (Computed Tomography X-Ray Scan) of the blood vessel, needs to be performed at the hospital to identify the clots position for treatment.

Finding: Table 10C shows there were 948 total stroke calls, and the average response time is 10 minutes and 3 seconds. This is a minute longer than the suggested response time.

The Controller's Office conducted an EMS audit in 2014 and examined 2012 and 2013 average response times for serious medical conditions, including strokes. The average response time for strokes in 2012 was 9 minutes and 18 seconds, and in 2013, 9 minutes and 47 seconds. In 2021, the average response times for strokes was 10 minutes and 3 seconds.

For strokes, the auditors took the average of 2012 and 2013 response times (9:18 and 9:47, respectively) for an average time of 9 minutes 33 seconds. This average was then subtracted from 10 minutes and 3 seconds. The difference is 30 seconds. This means that in 2021, it took the paramedics 30 seconds longer to respond to a reported stroke dispatched call, compared to 2012 and 2013.

Cardiac Emergency Statistics

Cardiac emergencies can cover many different chest related symptoms, including cardiac arrest. Cardiac arrest is a condition in which the heart suddenly and unexpectedly stops pumping blood to the brain and other vital organs.

As the auditors stated above, **the CAD database does not list cardiac arrest as a call type.** Immediate medical attention is required for survival. The CAD data lists complaints of 'chest pain', and 'heart problems', which when added together totals 4,308 calls. The response times averaged 10 minutes and 13 seconds, shown in Table 10D. This is a minute and 14 seconds longer than the suggested response times.

The CDC collaborated with Emory University and the American Heart Association to develop CARES (Cardiac Arrest Registry Enhance Survival). This is a registry that compiles cardiac arrest survival statistics, from more than 2,300 EMS agencies and 2,500 hospitals in the nation. The report states:

> CARES allows participating communities to view their own statistics online confidentially and compare their performance to anonymous aggregated data at the local, regional, or national level. CARES automatically calculates local 911 response intervals, delivery rates for critical interventions (e.g., bystander CPR and public access defibrillation [PAD]), and community rates of survival and functional status at discharge, on the basis of each patient's CPC Scale. An annual report is provided to all participating communities that summarizes local results in comparison to regional and national benchmarks. Tracking performance longitudinally allows communities to better understand which elements of their care are working well and which elements need improvement. Reporting at the state and local levels can enable state and local public health and EMS agencies to coordinate their efforts to target improving emergency response for OHCA events which can lead to improvement in OHCA survival rates.

Table 12 summarizes the CARES report for Pittsburgh, Pennsylvania, and the nation. Of the cases reported to the CARES database, Pittsburgh had a total of 325 cardiac arrest patients in 2021. Of those patients 102 survived to the hospital which is a 31.38% survival rating for

Pittsburgh EMS. Pennsylvania had 25.10% and the nation had a 24.68% survival rating for cardiac arrest patients' survival to the hospital.

TABLE 12
Cardiac Arrest Registry Enhance Survival
Patient Survival to Hospital
2021

	Pittsburgh	Pennsylvania	Nation
Number of Patients	325	8,062	146,924
Overall Survival to Hospital Admission	102 (31.38%)	2,023 (25.10%)	36,258 (24.68%)

Source: CARES Survival and Summary Reports

Finding: In 2021, Pittsburgh EMS significantly outperformed both Pennsylvania and the nation by almost 7%, for overall survival of cardiac arrest patients to the hospital.

Pittsburgh EMS received the American Heart Association Mission: Lifeline GOLD PLUS Recognition for the fourth year in a row in 2021. This mission is dedicated to show EMS agencies excellence in treating heart attack and stroke nationwide. This is an impressive accomplishment considering the Bureau staffing issues.

The 2014 performance audit reported cardiac arrest average response times as 7 minutes and 36 seconds in 2012 and 7 minutes and 58 seconds in 2013. In 2021, the auditors found the average response times for cardiac emergencies is 10 minutes and 13 seconds.

To compare the findings of the two audits, the auditors took the average of 2012 and 2013 response times for cardiac arrest (7:36 and 7:58, respectively) for an average time of 7 minutes 47 seconds. This average was then subtracted from 10 minutes and 13 seconds. The difference is 2 minutes and 26 seconds. This means that in 2021, it took the paramedics 2 minutes and 26 seconds longer to respond to a reported cardiac emergency dispatched call than in 2012 and 2013.

Finding: In 2021, it took paramedics longer to reach cardiac emergencies and stroke patients than in 2012 and 2013.

Null Calls

Null calls are canceled calls and can occur at any time. While there is not a complete list, according to the Pittsburgh EMS administration, some reasons null calls happen are: canceled by police, fire or caller, no patient found or refusal of assistance, wrong address, third party caller and the person involved was not injured or does not want EMS assistance, no emergency found or false medical alarms, standbys at fire or police incidents or special events.

A specific example is, a unit is dispatched, but upon arrival on scene the patient does not wish to be transported to the hospital – making the call null. In this example, the CAD data

would have '*transport time'*, and the '*at hospital time'* recorded as null. The close time is usually always listed, regardless of when the call became null.

CAD Data

The 2021 CAD data listed a total of 83,901 emergency call requests. From the 83,901 emergency calls dispatched, only 61,532 EMS (73.33%) units were recorded to be enroute. This means 22,369 (26.66%) of the calls were cancelled, or made null, **enroute to a scene**.

Of the 61,532 EMS units sent enroute, 59,818 arrived on scene of the emergency, meaning 1,714 (2.78%) of those calls were nulled.

From 59,818 EMS units that arrived on scene, 40,508 (67.7%) wanted to be transported to the hospital, with 40,249 going into the hospital for treatment. This means that people, even when they are taken to the hospital, can still refuse treatment.

Finding: In 2021, 43,651 or 52.03% of all dispatched calls were nulled at some point.

Null calls can be a result of a concerned citizen making a 911 call for what they perceived to be an individual needing help. These calls can become null when EMS arrives on scene and the person refuses or does not need medical attention. Legally, Pittsburgh EMS must respond/dispatch to every call, as it would be negligent if they did not send an EMS unit to investigate. The reason a null call happens is not listed in the CAD data.

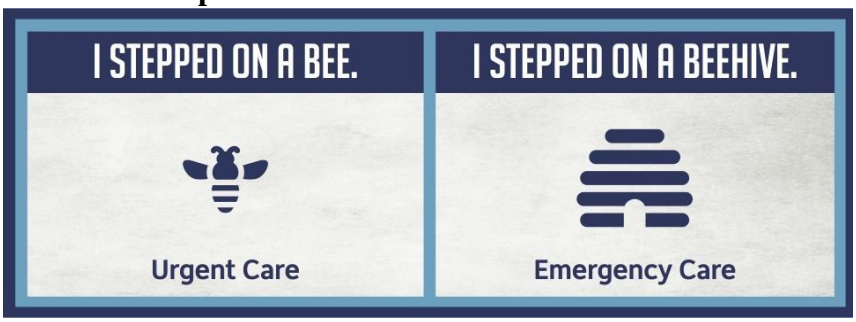
Paramedics interviewed by the auditors stated that in their experience, a considerable amount of high priority calls are intoxicated or homeless citizens who often refuse transport. Table 9 shows that in 2021 there were 43,537 high priority, E0 and E1 calls dispatched. The auditors found from the CAD data that of E0 and E1 calls 11,372 were canceled enroute, never making it on scene. These calls tie up medic units and first responders preventing them from being available to respond to other emergency calls.

Public Awareness

Health care can be confusing when you or a member of your family is sick or injured. What matters the most is getting them help, e.g., the right care at the right place. The public oftentimes calls 911 and goes to the emergency room instead of utilizing an urgent care facility or making an appointment with their medical doctor. This ties up emergency vehicles and emergency rooms for those who really need emergency medical attention. It is in the best interest of EMS to help reduce trips to the ER and to reduce the number of null calls.

Figure 1 is an example of a Florida health care organization using billboards to raise awareness of whether to seek help at an urgent care facility or an emergency room. The stepping on a bee should result in a visit to an urgent care facility; stepping on a beehive should result in seeking emergency care through an emergency room. Additional billboard examples of health awareness advertisements can be found in the Appendix as Exhibit F.

FIGURE 1
Example of Health Awareness Advertisement



Source: BayCare Healthcare System

RECOMMENDATION 8:

EMS administration should work with the Department of Public Safety, and local health care organizations, via public service announcements, to educate the public to determine when there is a medical emergency versus a non-emergency. This would help to guide the public to go to an Urgent Care facility for a non-emergency, versus calling 911. Eliminating non-emergency visits to the emergency room will reduce costs for everyone. This initiative should compose of both traditional and digital marketing to ensure the largest outreach possible.

Unit Hour Utilization

A common practice in the EMS industry is to calculate Unit Hour Utilization (UHU) to measure the effectiveness of an EMS agency's system. A unit hour is equal to one hour of service by an EMS unit. Utilization is the measure of productivity.

There are many uses for UHU, depending on what information is needed. UHU can be used to determine expenses and payroll for an EMS agency. Simple UHU is calculated by dividing the number of hours a unit works by the number of assignments it handles. For example, a unit that works 10 hours and handles 5 assignments would have a simplified UHU of .5. After finding the UHU for each unit, averaging them discovers the EMS agencies' productivity. Therefore, the more productive the agency is, the higher the number.

The ranges below show the general scale of evaluating UHU:

.55 - .45 – Over Utilization
.45 - .35 – Above Average Utilization
.35 - .25 – Average Utilization
.25 - .15 – Below Average Utilization
.15 - .01 – Poor Utilization

Pittsburgh EMS paramedics and EMTs have other duties aside from responding to medical emergencies. This includes duties such as: restocking supplies in their EMS unit and

station, sanitizing and cleaning vehicles after each patient transport, refueling or servicing the EMS unit, and completing paperwork. These duties are all necessary before the unit can return to service. With these additional responsibilities, it is not realistic for an EMS unit or crew to report 1.00 or 100% utilization. Other factors affecting a units UHU is population size, city or urban areas, distance to and from the hospital (time of overall transport), and the wellness and safety of personnel.

The UHU analyzed for this audit determines the amount of time (hours) a medic unit or ambulance was in service for the year and the number of assignments/calls the unit ran throughout the year.

Table 13 shows the 2021 UHU by unit. The auditors used the following formula to calculate the UHU: *Total # of Hours a Unit Worked / Total # Assignments = Unit Hour Utilization.*

TABLE 13
Unit Hour Utilization for Each
Medic Unit and Ambulance
2021

Unit	Total Assignments (per year)	Total Number Hours (per year)	Unit Hour Utilization
5101	4,086	8,760	0.466438
5102	4,691	8,760	0.535502
5103	4,753	8,760	0.542580
5104	4,692	8,760	0.535616
5105	5,035	8,760	0.574772
5106	4,048	8,760	0.462100
5107	3,407	8,760	0.388927
5108	4,555	8,760	0.519977
5109	4,040	8,760	0.461187
5110	4,108	8,760	0.468950
5111	3,743	8,760	0.427283
5112	3,085	8,760	0.352169
5114	5,171	8,760	0.590297
5145	4,645	8,760	0.530251
5146	4,985	8,760	0.569064
5147 **	2,186	4,380	0.499087
Average UHU			**0.495263**

Data source: 2021 CAD Data
** Unit only runs part–time

The overall average UHU of Pittsburgh EMS medic units and ambulances is 0.495263, which is the highest/over utilization for EMS agencies. This means a Pittsburgh EMS unit is

utilized during each shift about 49.5% of the time. Out of the 16 total medic units and ambulances, 13 are ranking at overutilization, while three are ranking at above average.

Finding: The UHU of Pittsburgh EMS is 0.49525263 or 49.5%, which is over utilization. **This means that EMS units are extremely busy with little downtime and can cause fatigue and burn-out which can lead to poor patient care or outcome.**

Budget and Overtime

Budget

The EMS operating budget in 2021 was $26,426,306. Of that, $18,818,796 or 71.2% was for salaries and wages which includes, regular pay, in-grade pay, longevity pay, allowances, uniforms, leave buy-back, and premium pay; $5,264,900 or 19.9% was for employee benefits. This means that 91.1% of the budget is used for employees' salaries and benefits. This leaves only 8.9% for professional and technical services, property services, other services, supplies, and miscellaneous.

Table 14 shows a breakdown of EMT, and paramedic hourly pay rates. (Paramedics first and second year pay rates are the same).

TABLE 14
EMT and Paramedic Hourly Rates
2021

Job Title	Hourly Rates
EMT	$18.87
Senior EMT	$19.17
Paramedic - 1st Year	$23.24
Paramedic - 2nd Year	$23.24
Paramedic - 3rd Year	$26.88
Paramedic - 4th Year	$30.49
Paramedic - 5th Year	$34.29
Crew Chief	$36.88

Source: 2021 Operating Budget

Overtime

EMS paramedics and EMTs work overtime for various reasons, including filling in for other personnel that call off sick or are on vacation, or to attend training classes. Paramedics and EMTs volunteer to work special events which are considered extra work. According to the EMS administration, personnel are not permitted to work more than 20 hours in a 24-hour period.

A 12-hour shift is a normal shift for paramedics and EMTs. The auditors were told by EMS administration that because of staffing shortages, EMTs and paramedics elect or are forced to work 18-hour shifts. The six hours over the normal 12-hour shift is calculated as overtime.

The overtime rate represents time and a half of the hourly base rate pay. An example would be a 5th year paramedic working an 18-hour shift. This individual will make 12-hours regular payrate of $34.29/hour and 6-hours overtime payrate of $51.43/hour which is $720.06 a day.

Paramedics and EMTs can work overtime on their days off. If the same fifth year paramedic works an 18-hour shift on their day off, they will make time and a half for the entire shift, totaling $925.74. This is a $205.68 increase in pay. Most overtime is related to the short staffing the Bureau of EMS has been dealing with for some time. This maintains paramedic coverage for the City but at a high cost to the taxpayer.

Table 15 shows the budgeted and actual amounts for regular and overtime in 2021 and the differences.

TABLE 15
Total Regular and Overtime Pay
2021

Pay Type	2021 Budget	2021 Actual Expenditures	Percentage Over/Under from Budget
Regular	$13,908,159	$12,711,569	-$1,196,590 (-8.6%)
Overtime	$3,741,637	$5,984,512	$2,242,875 (37.5%)
Totals	**$17,649,796**	**$18,696,081**	**$1,046,285 (5.6%)**

Source: 2021 Operating Budget

The auditors verified the actuals of regular and overtime pay in 2021 with the accounting department of the City Controller's Office. The City Controller's Office is responsible for tracking all City expenditures and publishes these amounts in a yearly report. Table 16 shows the 2021 General Fund Expenditures for EMS.

TABLE 16
City Controller's Office
Bureau of Emergency Medical Services
2021 General Fund Expenditures

Ending Balance	Fund - Object Account - Description
$12,711,569.20	11101 - 51101 – Regular Pay
$ 5,984,511.54	11101 - 51401 – Premium Pay

Data Source: City Controller's Accounting Department

Budgeted and actual monies don't always match but are usually close in numbers. In 2021, the Bureau's regular pay expenditures were $1,196,590 less or -8.6% less than what was budgeted; overtime pay was $2,242,875 ($5,984,512-$3,741,637) or 37.5% more than what was

budgeted. This shows that EMS did not use the total amount budgeted for regular pay but paid more in overtime in order to provide adequate City coverage. This supports the administration's assertion that the Bureau is understaffed.

Finding: In 2021, the Bureau of EMS was $1,046,285 over budget, most of which was for overtime.

According to EMS administration, they have requested increases in the number of paramedics in recent years. It should be noted that in 2023, EMS requested an increase of eight paramedics, the Public Safety Director requested 12, and the final number added to the budget was an increase of six paramedics.

RECOMMENDATION 9:

EMS administration should continue to request from OMB that more paramedic positions be added to the budget. This would reduce workloads and decrease overtime expenses.

As reported in the "call volume by unit" section of this report, page 2 of the February 7, 2020, EMSWORLD national publication states, "a community with too few staffed EMS units risks overworked providers and not having adequate coverage to meet the demand of constituents. ... possibly leading to burnout and high turnover."

Forced Extra Hours

EMS paramedics and EMTs can be *forced* to work extra hours resulting in overtime pay rates. There are many reasons a paramedic or EMT are forced to work. This could be because of other personnel call-offs, time-off, vacations, worker's comp, sickness, military leave, etc. Paramedics and EMTs do not have a limit to the amount of overtime they are allowed to work in a pay period.

When paramedics and EMTs are being *forced*, they cannot decline without being reprimanded. A person can be forced to remain or return to duty, even if they had already requested time off beforehand, with some exceptions. For example, being on military leave or death leave.

EMS strives to keep all 13 medic units in service during the 24-hours of operations, but this is not always possible. If manpower is extremely short for a shift, then EMS may not be able to have all trucks in service. Other medic stations will need to cover a larger area – this in turn can decrease response times, survival rates and overall morale of the employees.

Special Events

The City of Pittsburgh and private organizations hold over a thousand special events every year and Pittsburgh EMS is required to have an on-site presence should a medical emergency occur. These include sporting events, concerts, parades, races, holiday and community events. Special events can be held at the David L. Lawrence Convention Center, Acrisure Stadium, PNC park, collegiate sporting events and throughout the city proper.

EMS covered on average 90 events per month in 2021. All these events were staffed by paramedics who are paid overtime. Each special event requires a different number of staff and EMS units. For larger events, such as football games, there are 22 paramedics and EMTs inside the stadium, with 2 – 3 transport units, and two motorcycle units in the parking lots on standby.

According to the EMS division chief in charge of Special Events, EMS bills every special event organization separately for their special event services. Bills are based on actual usage of equipment and personnel. Paramedics, medic units, medic motorcycle, medic bicycle, medic cart, river rescue boat, equipment fee, administration cost, and FICA tax, are all services that can be billed. The money received is deposited into the special events trust fund.

The union contract provides language for paramedics working special events. The contract states:

> The Union shall participate in a task force with the City to develop parameters for contracting out extra work details that cannot be covered by bargaining unit employees. The Special Events Policy is hereby incorporated by reference herein. Where conflicts between the Special Events Policy and this contract occur, the Special Events Policy shall control. Bargaining unit employees must call off four hours prior to the start of an Extra Work detail.

Billing/Collections

Reimbursement for the expense of emergency unit transports and/or on-site assessment is sought from a patient's Medicare, Medicaid, or commercial health insurance provider and helps reclaim some of the expenses incurred. To recover some of these costs, EMS contracts with a third-party billing company, Quick Med Claims. Collections of payments and refunds are included in this service.

Until 2014, Pittsburgh EMS billing was done in-house. According to the EMS administration, this proved time-consuming and expensive. In 2015, Quick Med Claims was contracted to do the billing with a one-year contract. Once the contract expired, Pittsburgh EMS contracted with another company, McKesson.

After a year, EMS administration found they were not receiving as much in reimbursements as they did with Quick Med Claims. Upon review of the contract and discussion with the City of Pittsburgh's Law Department, EMS was able to terminate the McKesson contract in April 2017 and re-engage Quick Med Claims for billing services. According to the

EMS administration, they have a good relationship with Quick Med Claims and are very satisfied with their services.

Refunds to patients/insurances companies etc. are necessary in some instances. All necessary refunds are issued by the City of Pittsburgh. The top reasons for refunds issued in 2021 were as follows:

- Insurance became retro-active after patient already made payment.
- Patient made payment prior to their insurance paying.
- Health insurance was processed prior to an auto or Workers' Compensation claim, which necessitated a refund to the individual's health insurance
- UPMC had requested several large refunds in 2021 for claims processed and paid in error.

Table 17 shows the amount of money deposited and refunded by the two billing companies over the past seven years for EMS transports.

TABLE 17
Totals for Collections/Reimbursements
for EMS Transports
2015-2021

Year	Billing Company	Deposit	Refunds	Adjusted Deposit
2015	Quick Med Claims	$12,053,727.30	-$140,712.37	$11,913,014.93
Jan 2016 - April 2016 (4 months)	Quick Med Claims	$1,317,570.42	-$25,195.14	$1,292,375.28
May 2016 - April 2017 (12 months)	McKesson	$8,317,690.92	-$26,533.67	$7,528,503.75
May 2017- Dec 2017 (8 months)	Quick Med Claims	$7,555,037.42	Unknown	$7,555,037.42
2018	Quick Med Claims	$11,769,295.11	-$86,388.10	$11,682,907.01
2019	Quick Med Claims	$13,054,801.51	-$178,889.92	$12,875,911.59
2020	Quick Med Claims	$11,341,341.43	-$56,751.41	$11,284,590.02
2021	Quick Med Claims	$13,309,028.28	-$3,122.58	$13,305,905.70

Source: EMS Administration

Table 17 shows Quick Med Claims collected $11,913,014.93 in 2015. The contract was then given to McKesson in 2016 – 2017, where they collected $7,528,503.75 in 12 months, which was approximately $6 million less than Quick Med Claims collected in the prior year. In

May 2017, the contract with McKesson was nullified and awarded back to Quick Med Claims. Reimbursements increased to $11, 682,907.01 in 2018.

According to the administrator who handles the City's account, payments for EMS transports are sent directly to a City lockbox at a bank and deposited directly into the City's General Fund by the bank daily. If any payments are received at the Quick Med Claims office, they are mailed to that address as well. ACH (Automated Clearing House) EFT (Electronic Funds Transfer payments are set up online, with all payments going directly into that bank account.

Lockbox and correspondence files along with an ACH report are pulled daily. There are currently two Quick Med Claims employees that have access to the website, to run the reports and collect the data.

EMS and Quick Med Claims Collection Process

When a medic unit or ambulance arrives on scene, EMS will evaluate and treat the patient before asking for insurance information. Insurance information is entered into an iPad on scene, if possible, which is then kept in the medic unit or ambulance. Information is entered into EMS Charts, which interfaces with the hospital's EPIC healthcare software. If an individual's information is already in the EPIC software, the insurance information can be crosschecked and verified. The patient, again if able, electronically signs the transport/billing signature form. The signed transport/billing form validates that the patient was transported. There are four representatives that can sign the patient transported form: the patient, a guardian, the medic or a receiving nurse at the hospital. A copy is found in the Appendix as Exhibit G.

Information in EMS Charts is not only accessible to the hospital's EPIC system but to the City's billing contractor, Quick Med Claims, who uses it to begin the billing/collection process. If insurance information is missing in EMS Charts, the contractor will send the patient a letter requesting this information. A copy can be found in the Appendix as Exhibit G-2.

Each patient is billed a different dollar amount, depending on the type of EMS vehicle used and the mileage it took to transport the patient to the hospital. Most insurance policies contain provisions with built-in premium charges that reimburse EMS for transports to hospitals as well as any on-site assessments. Most insurance companies send payment directly to the City of Pittsburgh EMS. There are a few insurance companies that send the EMS payment directly to the patient. The patient is then responsible for forwarding that payment to City of Pittsburgh EMS lockbox.

Sometimes Quick Med Claims needs additional information from the patient, so the patient is sent a letter requesting the information. Copies of these letters requesting information can be found in the Appendix. The Request for Insurance and Authorization example is G-3,

Request for Insurance and Secondary Insurance Information is G-4, and the Signature Required for Medicare Submission is G-5.

City Residents

City residents are considered 'subscribers' and are not personally responsible for any EMS service. Quick Med Claims will review the patient's address to see if they are a City resident and 'tag' their account, via the individual's zip code of residence.

Pittsburgh residents should not pay anything out-of-pocket as the result of being transported to a hospital by EMS, unless a patient's insurance company pays for the transport and sends payment to the patient. In this case, payment needs to be forwarded by the patient to the City. A City resident can be submitted to collections if they received a payment from their insurance company and failed to submit that payment to the City of Pittsburgh EMS. They can also be held liable for fraud.

If a City resident's insurance pays the City directly, then the account is closed. If a patient lives in the City of Pittsburgh and does not have health insurance coverage, they will not receive a bill for transport. Sometimes mistakes happen and a City resident will receive a bill before or after the insurance has paid. City residents who receive a bill must contact Quick Med Claims to tell them that they are a City resident, so they are no longer responsible for payments.

Medicare and Medicaid Payments

It should be noted that the City has a separate contract with Quick Med Claims to bill Medicare and Medicaid. These insurance coverage amounts are set by the federal government and no patient, whether they live in the City or not, can be billed for any charges over the amount the government pays. Medicare and Medicaid payments are low in relation to the actual cost of service received.

Collections Received

In 2021, Pittsburgh EMS recovered over $13 million through billing patients' health insurance which is approximately 50.3% of their total EMS budget. After refunds and expenses, the total revenue is as follows:

Revenue received from accounting department for 2021:	$13,264,283.47
Refunds and expenses:	$1,002,749.40
Actual:	$12,261,534.07

Finding: Monies collected from patients with and without health insurance are deposited into the General Fund not into the EMS budget.

An example of a patient's actual bill is shown in the Appendix as, Exhibit G-1. It describes the City of Pittsburgh EMS's claim for the patient's transport. On the bill it is written

that it is the responsibility of the patient to submit their reimbursement which they received from their insurance company to the City.

Finding: Information about billing process is not listed on the EMS website.

The auditors compared a website from Lynchburg, Virginia to the City of Pittsburgh's website regarding details of collections and billing charges. The Lynchburg website includes a detailed explanation of EMS billing services, transportation fees, milage, etc. and any other information related to using an ambulance in their city.

RECOMMENDATION 10:

EMS administration should work with the City's I&P Department to add information to their website explaining the billing process.

The billing vendor's information should include contact information and all possible charges should be listed. The site should also explain that City residents are not responsible for any payment their health insurance does not cover. With the exception that when the patient receives a payment from an insurance company, the city resident is required to submit it to City EMS. Failure to do so results in the patient's bill being sent to a collection agency.

Fleet Inventory and Analysis

EMS must meet compliance requirements regarding licensure and general operating standards and must maintain specialized equipment and supplies on medic units. The vehicles receive maintenance services at the City garage located at 29th Street & Railroad Street in the Strip District neighborhood. Although the garage is owned by the City, the labor is outsourced to a third-party vendor, First Vehicle Services.

Inventory

The EMS fleet consists of 79 types of EMS vehicles used by the three divisions: Ambulance, Rescue, and Training. EMS vehicles range in age from 1982 to 2022. The oldest operating emergency vehicle is one 1982 Chevrolet C3500 which is used as a Trench Collapse Rescue Truck.

Table 18 lists all EMS fleet inventory as of January 2021; there are 16 spare vehicles. The mothballed vehicles are a collection of spare vehicles that are equipped for operation but are not in service but could be used in case of an emergency. Decommissioned vehicles are not in service; they are inoperable and are sold at auctions.

TABLE 18
EMS Fleet Inventory
As of January 2021

Unit	Year	Make	Model	Description of Use
Medic 1	2019	Ford	F550	Frontline Ambulance P-Lift
Medic 2	2018	Ford	F550	Frontline Ambulance P-Lift
Medic 3	2018	Ford	F550	Frontline Ambulance P-Lift
Medic 4	2019	Ford	F550	Frontline Ambulance P-Lift
Medic 5	2018	Ford	F550	Frontline Ambulance P-Lift
Medic 6	2018	Ford	F550	Frontline Ambulance P-Lift
Medic 7	2017	Ford	F550	Frontline Ambulance P-Lift
Medic 8	2017	Ford	F550	Frontline Ambulance P-Lift
Medic 9	2020	Ford	F550	Frontline Ambulance P-Lift
Medic 10	2019	Ford	F550	Frontline Ambulance P-Lift
Medic 11	2022	Ford	F550	Frontline Ambulance P-Lift
Medic 12	2020	Ford	F550	Frontline Ambulance P-Lift
Medic 14	2017	Ford	F550	Frontline Ambulance P-Lift
Medic 15	2011	Ford	F450 Super Duty	Spare Ambulance (Stocked)
Medic 16	2011	Ford	F450 Super Duty	Spare Ambulance (Stocked)
Medic 17	2011	Ford	F450 Super Duty	Spare Ambulance (Stocked)
Medic 18	2016	International	Terrastar	Spare Ambulance P-Lift
Medic 19	2016	International	Terrastar	Frontline Ambulance P Lift
Medic 20	2016	International	Terrastar	Spare Ambulance (Unstocked)
Medic 21	2015	International	Terrastar	Spare Ambulance (Unstocked)
Medic 22	2016	International	Terrastar	Spare Ambulance P Lift
Medic 23	2013	International	Terrastar	Spare Ambulance P Lift
Medic 24	2015	International	Terrastar	Tactical Medic Ambulance (Stocked)
Medic 25	2015	International	Terrastar	Spare Ambulance (Unstocked)
Medic 29	2014	International	Terrastar	Spare Ambulance (Unstocked)
Medic 30	2015	International	Terrastar	Infection Ambulance (Unstocked)
Medic 31	2006	Ford	E350	Special Event Ambulance
Medic 32	2006	Ford	E350	Special Event Ambulance
Medic 33	2010	Ford	E350	Special Event Ambulance
Medic 34	2010	Ford	E350	Special Event Ambulance
Medic 35	2011	Ford	E350	Special Event Ambulance
Medic 36	2011	Ford	E350	Special Event Ambulance
Medic 37	2016	Ford	E350	Special Event Ambulance P-Lift
AMB-45	2018	Ford	E350	EMT Truck-BLS P Lift

TABLE 18 (continued)
EMS Fleet Inventory
as of January 2021

Unit	Year	Make	Model	Description of Use
AMB-46	2020	Ford	E350	EMT Truck-BLS P-Lift
AMB-47	2020	Ford	E350	EMT Truck-BLS P-Lift
AMB-48	2018	Ford	E350	EMT Truck- BLS P Lift
AMB-49	2017	Ford	E350	EMT Truck - (Unstocked) P-Lift
Rescue 1	2017	Pierce	Arrow XT	Front Line Rescue Truck
Rescue 2	2017	Pierce	Arrow XT	Front Line Rescue Truck
XR-1	2007	Pierce	Arrow XT	Spare Rescue Truck
XR-2	2007	Pierce	Arrow XT	Spare Rescue Truck
Rescue 3	1994	Marion	Spartan	Spare Rescue Truck
Rescue 4	1987	Chevrolet	CP30	Dive Rescue Truck
Rescue 5	1982	Chevrolet	C3500	Trench Collapse Rescue Truck
MCU 1	2006	GMC	5500	EMA Mass Casualty Unit
Official 5	2011	Ford	Explorer	Chief
Unit 50	2018	Ford	Explorer	Deputy Chief
Unit 51	2019	Ford	Explorer	Assistant Chief
Unit 500	2018	Chevrolet	Tahoe	Division Chief Rescue
Unit 501	2018	Chevrolet	Tahoe	Division Chief Ambulance
Unit 502	2018	Chevrolet	Suburban	District Chief
Unit 503	2020	Chevrolet	Suburban	District Chief
Unit 504	2017	Chevrolet	Suburban	District Chief
Unit 505	2019	Chevrolet	Tahoe	Division Chief Special Events / Planning
Unit 506	2017	Chevrolet	Suburban	District Chief -Spare
Admin 5	2008	Ford	Explorer	Spare Admin. Vehicle
TACMED 1	2011	Chevrolet	Suburban	Tactical Medic Response
Unit 5401	2018	Dodge	Caravan	Supply Car
Unit 5801	2018	Dodge	Caravan	Mail Car
Unit 530	2018	Dodge	Caravan	Pt. Care Coord.
Unit 5300	2017	Chevrolet	Express Pass Van	Training
Unit 5311	2003	Chevrolet	3500	Training Passenger Van
Unit 5310	2008	Chevrolet	Express Cargo Van	Training Cargo Van
EMS 10	2003	Dodge	Ram 3500	Laborer Pick Up Truck
Hazmat 1	2006	Pierce	Saber	EMA Hazmat Response
Boat 5221	2006	Sea Ark	Little Giant	EMA River Rescue Boat (Primary)
Boat 5222	2004	Sea Ark	Little Giant	EMA River Rescue Boat (Primary)
Boat 5223	2006	Husky	Natiq	River Rescue Air Boat

TABLE 18 (continued)
EMS Fleet Inventory
as of January 2021

Unit	Year	Make	Model	Description of Use
Boat 5224	1987	Boston Whaler	Guardian	River Rescue Boat (Spare)
Boat 5225	1988	Achilles	RHIB	River Rescue Inflatable
Boat 5226	2008	Achilles		EMA River Rescue Inflatable
Boat 5227	2013	Hovercraft		EMA Hovercraft
New				
New AMB-45	2021	Ford	E350	EMT Truck-BLS P-Lift
New AMB-49	2021	Ford	E350	EMT Truck -BLS P-Lift
Mothballed				
Medic 28	2013	International	Terrastar	Spare Ambulance (Unstocked)
Medic 26	2014	International	Terrastar	Spare Ambulance (Unstocked)
Decommissioned				
Medic 19	2013	International	Terrastar	Spare Ambulance (Unstocked)
Medic 27	2014	International	Terrastar	Spare Ambulance (Unstocked) P-Lift
Medic 20	2013	International	Terrastar	Spare Ambulance (Unstocked)
Medic 21	2013	International	Terrastar	Spare Ambulance (Unstocked)

Data Source: EMS Vehicle Inventory

Fleet Budget

According to the City's Fleet Manager, Public Safety requested $23 million dollars for new vehicles in 2020 for the 2021 budget. The Department of Public Safety received $12.2 million dollars, in which Pittsburgh EMS received $456,485.75. EMS units are ordered to the specifications determined by the EMS administration and the City's Fleet Manager. They are custom-made for the City and must be ordered six months in advance, to account for manufacturing time. The BLS ambulance is smaller than the ALS medic unit with less equipment built into the vehicle.

With medic units and ambulances, it is possible to buy a new chassis (vehicle frame only) and mount it onto the body. This allows the medic units and ambulances to be reconditioned for less money. As shown in Table 19, the cost of one chassis was $126,555.75 and is estimated to take 8 to 12 weeks to manufacture. According to the EMS Chief, another five chassis will need to be replaced in the coming years.

Table 19 shows that two BLS ambulance remounts, one re-chassis, one SUV vehicle and one tactical emergency vehicle was purchased in 2021. It also shows the actual costs and the funding sources for these purchases.

TABLE 19
List of EMS Vehicles/Chassis Purchased
Funding Source, Actual Cost and Vehicle Status
2021

EMS	Unit	Unit Cost	Upfit Cost	Funding Source	Actual Cost	Status
EMT Amb-remount	2	$140,000.0		EMS Trust	$257,732.00	In-Service
Re-chassis MED-11	1	$45,730.0	$ 80,828.75	Auction Proceeds & 2020 Contingency	$126,555.75	In-Service
Admin SUV	1	$37,540.00	$24,002.55	EMS 2021 Operating	$72,198.00	Ordered
TEMS Vehicle	1			PS Support Trust Fund	$72,198.16	
Totals	**5**				**$456,485.75**	

Data source: OMB Fleet Manager

Currently, the Bureau wants to place into service two more ALS medic units and one more BLS ambulance. EMS administration noted that most EMS vehicles are diesel and are expensive to repair. There are no plans to convert EMS vehicles to electric or natural gas.

Fleet Age

One of the main concerns voiced by EMS administration is the age of the fleet. Table 20 shows that 32 vehicles are under five years of age or 40.05%, of EMS's total fleet. There are 53 (67.09%) of the vehicles are under 10 years old. The oldest vehicle is 38 years old.

The auditors researched and found a report done in circa 2017 by Cleveland Association of Rescue Employees titled, *Recommended Replacement Schedule for Cleveland EMS Ambulances CARE 1975.* The Report analyzes the requirements of having a medically-sound fleet for emergency medical services. It states:

> After conducting a nationwide survey of urban EMS systems, it has been determined that the average ambulance spends **4.8 years or 163,833 miles** in frontline 911 service. It is then placed into reserve status for another 3-4 years and is permanently retired at an average of **7.8 years or 200,714 miles.**

Pittsburgh EMS has 13 medic units in continuous frontline service; four are older than 4.8 years. Three are from 2017, and one is from 2016 (six and seven years old respectively). Out of the 10-spare stocked and unstocked ambulances, five are older than 7.8 years. One is from 2013 (10 years old), one is from 2014 (11 years old), and three are from 2011 (12 years old).

The Cleveland Association of Rescue Employees report also states, “It is true that ambulances are not cheap, and that a municipality might be leery of such a significant expense but remember that the lives of the citizens are riding on the reliability of each ambulance.”

Table 20 is a frequency distribution for the entire inventory of EMS vehicles and the year purchased. Following the Cleveland Association of Rescue Employees survey suggestions vehicles are retired at 7.8 years. The vehicles bought in 2014 and older, 35.44% of the existing EMS fleet should be ready for decommissioning. This is over one-third of the fleet. (The bolded rows are five and 10 years old)

TABLE 20
Frequency Distribution of
Year Vehicles Were Purchased
1982 – 2022

Year	Number of Vehicles	Cumulative Vehicles	Percentage	Cumulative Percentage
2022	2	2	2.53%	2.53%
2021	2	4	2.53%	5.06 %
2020	9	13	11.39%	16.45 %
2019	6	19	7.59%	24.05 %
2018	**13**	**32**	**16.46%**	**40.05 %**
2017	9	41	11.39%	51.90 %
2016	4	45	5.06%	56.96 %
2015	4	49	5.06%	62.02 %
2014	2	51	2.53%	64.56 %
2013	**2**	**53**	**2.53%**	**67.09 %**
2012	0	53	0.00%	67.09 %
2011	7	60	8.86%	75.95%
2010	2	62	2.53%	78.48%
2009	0	62	0.00%	78.48%

TABLE 20 (continued)
Frequency Distribution of
Year Vehicles Were Purchased
1982 – 2022

Year	Number of Vehicles	Cumulative Vehicles	Percentage	Cumulative Percentage
2008	3	65	3.80%	82.28%
2007	2	67	2.53%	84.81%
2006	5	72	6.33%	91.14%
2005	0	72	0.00%	91.14%
2004	1	73	1.27%	92.40%
2003	2	75	2.53%	94.94%
1994	1	76	1.27%	96.20%
1988	1	77	1.27%	97.47%
1987	1	78	1.27%	98.73%
1982	1	79	1.27%	100.00%
Total	**79**			

Data source: EMS Vehicle Inventory

Using the Cleveland report as a guideline Pittsburgh's EMS has 32 vehicles or 40.05% of their fleet within the average vehicle's lifespan of 4.8 years. The Cleveland nationwide survey also states that vehicles over 7.8 years of service should be decommissioned. Therefore, about one-third (32.91%) of the EMS fleet meets this criteria to be decommissioned.

Table 21 summarizes the age of the EMS fleet in five-year increments up until 2022.

TABLE 21
Fleet Vehicles Based on Number of Years
1982-2022

Years	Number
1 to 5 (2022 – 2018)	32 (40.50%)
6 to 10 (2017 – 2013)	21 (26.58%)
Greater than 10 (2012 – 1982)	26 (32.92%)
Total	**79 (100%)**

Data source: EMS Vehicle Inventory

According to City of Pittsburgh's Fleet Manager, the entire spare fleet, 16 vehicles (10 spare ambulances, three spare rescue trucks, one spare administrative vehicle, one spare district chief vehicle and one spare river rescue boat), should have been replaced in 2020, but there was no funding available because of the pandemic.

Prior to the pandemic, EMS was replacing three frontline ambulances a year. The replacement schedule changed because of the pandemic and with the hiring of a new fleet manager. This resulted in three frontline ambulance replacements in 2019, two replacements in 2020 and no replacements made in 2021.

The article *How to Develop a Fleet Replacement Strategy*, published by EMSWORLD in April 2016, describes how important a fleet replacement strategy is for the safety of paramedics and patients alike. A fleet replacement strategy aids fleet managers in the selection of which vehicles to replace.

The authors suggested that each EMS administration should compile cost analysis information such as, the initial purchase cost versus total maintenance costs (repair and preventative maintenance) to show the total investment in each vehicle in the current fleet. This will determine which vehicles require less servicing, have higher availability for the lowest costs, and will support the operational need. This will also identify those vehicles that need replaced.

RECOMMENDATION 11:

EMS administration should work with the new fleet manager to create a fleet replacement strategy and not deviate from it. This will ensure adequate and safe vehicles for EMS's future.

Fleet Mileage

According to the patient care coordinator, EMS unit mileage is tracked in different ways. For patients transported to the hospital the milage is documented on the PCR, calculated by GPS coordinators. In 2020 and 2021, overall mileage was tracked for vehicle maintenance. This mileage tracking was changed in 2023 with mileage being tracked yearly, and vehicle maintenance determined by engine hours of use. The patient care coordinator will record vehicle mileage at the beginning of the year and at the end of every year.

Finding: There are 22 vehicles in EMS's fleet that have over 100,000 miles. Of the top ten vehicles with the highest miles, seven of them are ambulances. With EMS receiving more calls each year, the mileage on each EMS unit increases.

Table 22 shows the top ten EMS vehicles with the highest mileage. Both 2007 rescue trucks have the most mileage with 215,473 miles and 194,642 miles. One 2011 Chevy Suburban has 167,700 miles. The remaining vehicles are ambulances of varying years.

TABLE 22
Top Ten EMS Vehicles
Greater Than 100,000 Miles

Year	Make/Model	Mileage
2007	Pierce Arrow XT (Rescue Truck)	215,473
2007	Pierce Arrow XT (Rescue Truck)	194,642
2011	Chevrolet Suburban (Physician's SUV)	167,700
2016	International Terrastar (Ambulance)	154,987
2014	International Terrastar (Ambulance)	148,262
2015	International Terrastar (Ambulance)	147,585
2014	International Terrastar (Ambulance)	139,413
2013	International Terrastar (Ambulance)	127,700
2013	International Terrastar (Ambulance)	124,388
2016	International Terrastar (Ambulance)	120,655

Data source: EMS Vehicle Inventory

RECOMMENDATION 12:

EMS administration should contact the grant writing department of OMB and encourage them to explore the possibility of securing grant money for purchasing new medic units and ambulances to replace older models. One example of available State grants can be found at the following link.

Fleet Storage

EMS attempts to store as many vehicles as possible in each stations bay areas and garages; this allows the vehicles to be easily accessible, safe, off the streets, and ready for operation when needed. This preserves the vehicles by protecting them from inclement weather, but space is limited. Other spare vehicles are stored outside in front of the EMS station where the vehicle is assigned.

EMS administration stated that vehicle garages would be beneficial to extend vehicle life by getting them out of bad weather. Spare/non-stocked vehicles are parked at the City garage and have been outside withstanding various types of weather conditions, which accelerates body deterioration.

Technology Used by EMS Vehicles

The auditors visited Pittsburgh's EMS Training Division and interviewed IT staff and examined various equipment used by EMS. EMS vehicles are equipped with Panasonic tablets, which are referred to as Mobile Data Terminals (MDT). These devices are connected to EMS CAD and road maps. Patient information is not stored on this device. Patient information is stored in a separate program called EMS Charts which allows the department to remain HIPAA compliant.

MDT is updated as needed by two team members of I&P: this process is overseen by the I&P's technology director and the EMS' patient care coordinator. All medical, electronic devices equipped on EMS vehicles require continuous charging by a standard 110v outlet. Charging is best completed inside a building making fleet storage even more important.

COVID-19

The emergence of COVID-19 in 2020 put a strain on all medical services, including Pittsburgh EMS. New procedures were adopted to protect paramedics and patients alike as well as implement a strategy to contain and mitigate the disease.

Procedures for COVID-19

Pittsburgh's EMS implemented the following procedures in response to the COVID-19 pandemic:

- 911 screening of calls for Febrile Respiratory Illness/COVID symptoms
    - Note: Febrile Respiratory Illness is a new or worsening episode of either cough or shortness of breath,
- Enhanced personal protective equipment (PPE) and infection control requirements on all patient encounters,
- Specific PPE/infection control procedures when performing high risk resuscitation procedures (airway management: basic and advanced, CPAP, nebulized medications, CPR),
- On-scene universal patient screening for COVID symptoms,
- Specific infection control procedures during patient transport,
- Specific PPE doffing/decontamination procedures at hospitals,
- Staffing of infection control teams (ECHO Units) on all shifts with the following missions:
    - Just in time training for field units.
    - Assistance to units on-scene performing high risk resuscitative procedures.
    - Assistance to field units with safe doffing of PPE and vehicle/equipment decontamination.
    - In home COVID testing for the Allegheny County Health Department (ACHD) (contain/mitigate strategy).
    - Public safety COVID testing for City of Pittsburgh and Allegheny County agencies.
    - Transport of vulnerable persons to safe-haven facilities for the Allegheny County Department of Human Services (DHS) (contain/mitigate strategy). These procedures were developed in house by Pittsburgh EMS. Pittsburgh EMS have been proactive over the years with infectious disease management and have had a plan in place for H5 N1 Influenza (2005), H1 N1 Influenza (2009), Ebola and Measles. The plans were updated to address the emerging science on COVID-19 in January 2020 and bureau- wide training implemented.

- When the Omicron strain appeared in December 2021, the only changes were increases to in-station (not on a call) masking requirements and the recommendation to wear N95 masks in station.

Operational planning from Pittsburgh EMS included a review of applicable Pennsylvania Department of Health and Bureau of EMS protocols. According to EMS administration, Pittsburgh EMS plans and procedures were adopted by Allegheny County EMS agencies and other regional EMS agencies.

Finding: Pittsburgh EMS was a leader for infectious disease plans and procedures in the area.

Safe Haven Mission

The Safe Haven mission was developed by Pittsburgh EMS at the request of Allegheny County's Health Department and Department of Human Services to move homeless people and/or in shelters/communal housing who were exposed and/or tested positive for COVID-19. Highly vulnerable individuals were put into quarantine at the Safe Haven location, monitored and cared for during their isolation period. The facility was staffed by DHS with medical support from Allegheny Health Network. There were no other agencies that could move these patients, so Pittsburgh EMS utilized their ECHO units.

Safe Haven was the only facility in the Pittsburgh area for this vulnerable group. Safe Haven was a hotel, outside of Pittsburgh – the exact location has not been published for anonymity purposes.

Hospitals were not 'Safe Haven' facilities, but all hospitals accepted COVID-19 patients. Allegheny Health Network, UPMC, ACHD's contact tracing team, social workers, immigrant services, and EMT agencies were all informed of the hotel's existence so that they could refer patients who qualify to the Safe Haven hotel.

Personal Protective Equipment (PPE)

The concept of using PPE was not new to EMS. Pittsburgh EMS has always taken precautions to protect personnel as necessary. When the COVID-19 pandemic began, Pittsburgh EMS was well prepared. Unlike the rest of the nation where shortages of PPE took place during the pandemic, especially for EMS agencies as PPE were doffed (removed/taken off) and discarded after every patient encounter.

According to the EMS patient care coordinator: "We started planning and buying PPE supplies in December 2019. This enabled us to get through the first wave of the pandemic without any shortages of supplies." It should be noted that EMS paid for some of their own PPE supplies when supplies from Allegheny County Emergency Services and PEMA were limited. The Pittsburgh Department of Public Safety PPE acquisition was centralized through the Fire Supply Warehouse. and supplies some were drawn from there as well.

EMS personnel wore a N-95 masks, at all times, as well as eye protection and gloves, on every patient encounter. Surgical masks were placed on every patient. A Millennium Mask with P-100 filter, otherwise known as a gas mask, was worn when performing high risk procedures (airway management, CPAP, nebulized medication and CPR). P-100 filters (a special face filter) were used for 6 months per Occupational Safety and Health Administration recommendations. Initially, for high-risk encounters or resuscitations, EMS wore a biohazard suit or gown. As information about the COVID-19 disease was learned, EMS transitioned away from this.

Many EMS agencies nationwide experienced hospitalizations, deaths, staffing shortages and had to use altered standards of care during pandemic waves. In 2020, Pittsburgh's EMS administration reported 19 of the 213 (8.9%) EMS employees tested positive for COVID-19, and in 2021, 15 of the 213 (7%) Pittsburgh EMS employees tested positive for COVID-19. No EMS personnel were hospitalized nor did any deaths occur due to COVID-19. These results are probably attributable to 97% of the personnel getting vaccinated and having an infection control/PPE plan in place.

Finding: Pittsburgh EMS maintained staffing and minimized staff illness and loss throughout the pandemic. With this, they were able to support city and county safety operations, including the Allegheny County Health Department and the Allegheny County Department of Human Services.

ARPA and CARES Funding

Additional funding due to the COVID-19 pandemic was needed for Pittsburgh EMS to maintain the high level of safety operations for both personnel and the public. PPE, and additional training were required. The Coronavirus Aid, Relief, and Economic Security Act (CARES) was a stimulus bill passed in March 2020 in response to the expected economic fallout of the COVID-19 pandemic in the United States. In accordance with County and federal guidelines the reimbursement grant was eligible for City expenditures related to the COVID-19 pandemic response. A year later, in March 2021, the American Rescue Plan Act (ARPA) was passed and emphasized funding for state, local, and tribal governments. Infrastructure repairs and improvements were a big part of this.

The auditors received a list from the City of Pittsburgh's Office of Management and Budget, with the total funding the City received via the federal CARES and ARPA acts for the COVID-19 pandemic for 2020 and 2021. Table 23 shows that the City of Pittsburgh received, in total, $385,011,810.97 from federal grants, for reparations and economic relief for the COVID-19 pandemic. From the total money received, $3,080,670.37 was allocated to EMS (highlighted column). Broken down, $2,650,744.55 was for payroll costs, $384,375.15 was for lost revenue, and $45,550.67 for supplies and PPE.

TABLE 23
All COVID-19 Funding for
The City of Pittsburgh with EMS Allocation
January 2020 – December 2021

Federal Act	Funder	City Legislation	Allocation	EMS Allocation	Use
CARES Act	Allegheny County	407 of 2020	$6,200,000.00	**$1,899,104.11**	Payroll Costs
CARES Act	Allegheny County	612 of 2020	$50,000.00	**$25,000.00**	Payroll Costs
CARES Act	Allegheny County	894 of 2021	$50,000.00	**$25,000.00**	Payroll Costs
CARES Act	U.S. Dept. of Homeland Security	522 of 2020	$103,373.82	**N/A**	N/A
CARES Act	U.S. Dept. of Health and Human Services	245 of 2020	$138,162.66	**$138,162.66**	Lost Revenue
CARES Act	U.S. Dept. of Health and Human Services	88 of 2021	$246,212.49	**$246,212.49**	Lost Revenue
CARES Act	U.S. Dept. of Justice	314 of 2020	$676,895.00	**$176,589.48**	Payroll Costs: $131,038.81 Supplies and PPE $45,550.67
CARES Act	U.S. Dept. of Housing and Urban Development	222 of 2020	$8,376,863.00	**N/A**	N/A
CARES Act	U.S. Dept. of Housing and Urban Development	605 of 2020	$3,112,342.00	**N/A**	N/A
CARES Act	U.S. Dept. of Housing and Urban Development	395 of 2020	$4,193,562.00	**N/A**	N/A
CARES Act	U.S. Dept. of Housing and Urban Development	395 of 2020	$2,258,787.00	**N/A**	N/A
CARES Act	U.S. Dept. of Housing and Urban Development	395 of 2020	$165,945.00	**N/A**	N/A
CARES Act	U.S. Dept. of Housing and Urban Development	92 of 2021	$8,947,600.50	**N/A**	N/A
ARPA	U.S. Dept. of Treasury	480 of 2021	$7,079,817.50	**N/A**	N/A

TABLE 23 (continued)
All COVID-19 Funding for
The City of Pittsburgh with EMS Allocation
January 2020 – December 2021

Federal Act	Funder	City Legislation	Allocation	EMS Allocation	Use
ARPA	U.S. Dept. of Housing and Urban Development	832 of 2021	$8,342,028.00	**N/A**	N/A
ARPA	U.S. Dept. of Treasury	453 of 2021 + amendments	$335,070,222.00	**$570,601.63**	New Position (Five years) - Patient Care Coordinator
Total			**$385,011,810.97**	**$3,080,670.37**	

Data source: City of Pittsburgh's Office of Management and Budget

Colleges/Universities

There are seven colleges/universities located within the City of Pittsburgh. Colleges and universities are tax-exempt properties because they are considered non-profit entities. Tax-exempt properties do not pay property taxes to the City. Property tax in 2021 was $148,757,225, (24.48% of City revenue) used to pay for various City services, including trash removal, special events services, EMS unit services, fire and police protection.

The City Controller's Office, in conjunction with the County Controller, completed a 2022 Tax-Exempt Properties Special Report that examined the number of tax-exempt properties in the county and City. According to the report, "In Allegheny County, the five largest tax-exempt organizations are the University of Pittsburgh Medical Center (UPMC), Allegheny Health Network (AHN), the University of Pittsburgh, Carnegie Mellon University (CMU), and Duquesne University." Three of the "Big Five" non-profit business entities located in the City are universities. Table 24 shows the 2022 loss of City taxes from the three largest universities as published in the special report.

TABLE 24
Estimated City Tax Loss on Property Exempt/Abated
Three Largest City Universities
2022

Institution Name	City Property Taxes Exempt	Percentage of Property Exempt from Taxes
University of Pittsburgh	$11,633,766	96.3%
Carnegie Mellon University	$3,551,821	92.9%
Duquesne University	$3,265,421	99.2%

Source: City and County Controller's 2022 Tax-Exempt Properties Special Report

The City of Pittsburgh provides public services, including emergency medical services, to colleges and universities within the city limits. The need for care varies from on scene care, or transportation to hospitals. The auditors attempted to find the number of times EMS visited each campus.

The auditors wanted to see if universities/colleges track how many visits City EMS units made to their campuses. The auditors emailed the campus's public safety departments at Carlow University, Carnegie Mellon University, Chatham University, Community College of Allegheny County, Duquesne University, Point Park University, and the University of Pittsburgh requesting the number of emergency calls made to 911 in 2021.

Of these seven institutions, Carlow University provided that in 2021, there were 28 calls placed by university students, staff or faculty, of which 20 resulted in EMS transport, and three involved on scene care. Point Park University disclosed that there were 36 cases involving EMS transport nothing else.

Carnegie Mellon University reported that, in 2021, no specific tracking data is kept pertaining to Pittsburgh's EMS. They do utilize services from Pittsburgh EMS as well as Carnegie Mellon Emergency Services, a student run organization that responds to on-campus emergencies on a limited basis.

911 Calls to Universities

Dispatch information is not kept by each university; therefore, the auditors contacted the patient care coordinator requesting the number of 911 calls dispatched to the three universities selected in the Controller's 2022 Tax-exempt report: University of Pittsburgh, Carnegie Mellon University and Duquesne University. The information was not available by university name but by campus housing addresses. The auditors submitted a list of University-owned student housing addresses and requested the number of dispatched calls in 2021.

The requested data was provided for each address as taken from the CAD database. This database listed 152 dispatched calls to the University of Pittsburgh, 69 dispatched calls to Carnegie Mellon University, and 19 calls to Duquesne University: totaling 240 dispatched EMS calls for these three universities in 2021. Null calls were not included in the total.

RECOMMENDATION 13:

The Department of Public Safety EMS administration should more adequately track the number of calls that EMS receives from college and university operated housing. This would provide City administrators the data to determine how often City public safety services serve the college and university community and help justify Payment in Lieu of Taxes (P.I.L.O.T.) from these non-profits.

Mt. Oliver Intergovernmental Agreement

The City of Pittsburgh has one intergovernmental agreement to provide EMS services to the Borough of Mount Oliver, this was updated on January 29, 2020. The current agreement states that the City of Pittsburgh gets paid $15,000 yearly for 2021, 2022, and 2023 for providing emergency medical services to the borough of Mount Oliver. The City of Pittsburgh is their only source for EMS. The Borough of Mount Oliver should not be confused with the City's neighborhood of Mt. Oliver, which is part of the City's 30th Ward. Despite the intergovernmental agreement with the City, residents of the Borough of Mount Oliver are not exempt from paying any unpaid portions of an EMS bill.

Community Outreach

Pittsburgh EMS is partnered with many agencies to create public health programs dedicated to developing a medically resilient community and reducing morbidity and mortality for the citizens of Pittsburgh. EMS is partnered with Allegheny County Health Department, Prevention Point Pittsburgh, Mercy Behavioral Health, Operation Safety Net, SafeCribs ®, Allegheny County Department of Human Services and the Pennsylvania Department of Health.

In 2019, the Pennsylvania Department of Health issued a health advisory outbreak for Hepatitis A. A health advisory outbreak indicates a rise in the number of cases of a particular disease. In 2021, EMS completed a pilot program for administering Hepatitis A vaccine to high-risk persons encountered on 911 calls.

Some examples of community outreach services are listed in the EMS 2021 Operations Summary report. These various health care instruction services are provided throughout the community by the Bureau of EMS:

- Special Event Coverage (Heinz Field, PNC Park, PPG Paints Arena, etc.)
- First aid and CPR/AED training
- Child car seat inspection and education program
- Envelope of life (EOL) program (standardized form that provides lifesaving patient information to emergency personnel in times of crisis or medical uncertainty)
- Stroke awareness
- Community and senior center visits for vital signs and glucose evaluations
- High school career days and middle school mentoring program
- Diversity recruitment campaign
- Pittsburgh Public Schools Emergency Response Technology Education
- Vaccination clinics points of dispensing (PODS) for influenza and pneumonia
- Clinical field education to paramedic students in the University of Pittsburgh Emergency Medicine Program
- Clinical field education to emergency medicine physician residents in the University of Pittsburgh Emergency Medicine Residency Program
- Participation in the Resuscitation Outcomes Consortium

Paramedics who work and provide community outreach volunteer to work and are paid overtime.

Community Paramedics

The City of Pittsburgh Bureau of EMS recognized the reoccurrence of non-emergency calls coming from a caller for the same illness. To relieve medic units having to respond to calls from the same patient, Pittsburgh EMS instituted community paramedics.

Community paramedics are EMS personnel who work with social workers to create a prescheduled patient list for the day to essentially do a wellness check. These community paramedics work on overtime hours with patients to establish a treatment process and assistance. These treatments can range from, helping citizens find funding for their medications, schedule appointments with a primary care physician, or creating a hazard free home. Currently the Bureau does not keep track of these visits.

RECOMMENDATION 14:

Pittsburgh EMS administration should keep a record of all community paramedic visits. Keeping a record of this service helps justify the program's existence and will determine if changes are necessary.

Leave Behind Narcan Program

In January of 2018, Pittsburgh EMS was one of the first EMS agencies in Pennsylvania to operate a leave behind Narcan program. Narcan is the brand name for naloxone, a nasal drug that stops the effects of an opioid overdose. Through this program paramedics and EMTs leave behind one Narcan kit with the post overdose patient or a family member, or another responsible party, when the patient declines transportation to a hospital, and has a high risk of overdosing in the future. The Narcan kits are paid for with funding from the Pennsylvania Commission on Crime and Delinquency, as well as, managed and funded by the Allegheny County Health Department.

In 2021, Pittsburgh EMS enhanced the Leave Behind Narcan Program to include Fentanyl Test strips, due to the increase of opioid overdose calls in Pittsburgh. According to the CDC Fentanyl test strips (FTS) are small strips of paper that can detect the presence of fentanyl, a deadly substance that is mixed with other drugs. According to the CDC's website:

> Fentanyl test strips (FTS) are a low-cost method of helping prevent drug overdoses and reducing harm. FTS are small strips of paper that can detect the presence of fentanyl in all different kinds of drugs (cocaine, methamphetamine, heroin, etc.) and drug forms (pills, powder, and injectables). FTS provide people who use drugs and communities with

important information about fentanyl in the illicit drug supply so they can take steps to reduce risk of overdose.

Prehospital Buprenorphine Pilot Program

In September 2021, Pittsburgh became the third City in the country to provide the lifesaving Prehospital Buprenorphine Pilot Program for opioid overdoses. Buprenorphine is a Food and Drug Administration – approved opioid, used by hospitals and physicians to treat opioid withdrawal; it is often administered after Narcan. As part of the Prehospital Buprenorphine Pilot Program, only ALS paramedics who have completed extra training, will be able to administer buprenorphine to patients experiencing overdose withdrawal. Patients who receive buprenorphine will be able to schedule a virtual follow up consultation with a doctor at the UPMC Medical Toxicology Bridge Clinic within 24 hours to get a buprenorphine prescription and get connected with critical harm reduction resources.

RECOMMENDATION 15:

Pittsburgh EMS administration should work with the City's I&P Department to add information on EMS's website, about the Leave Behind Narcan and Prehospital Buprenorphine Pilot Program. People may not know about either program, and having it published on the webpage will increase public awareness. The EMS website should include information about how to spot an overdose, access Narcan, and how to administer it.

APPENDIX

Exhibit A
Paramedic and EMT Job Duties

Paramedic Position Duties

- Drives or accompanies driver in emergency medical vehicle to site of emergency as informed by dispatcher or supervisor.
- Helps extricate victims from entrapment or hazardous environments.
- Provides rescue, basic and advanced life support or other emergency medical care as needed.
- Maintains radio or other contact as necessary with Public Safety Dispatch, EMS Command Staff, EMS Physician, receiving hospital, and other agencies as necessary. Follows the EMS Physician's instructions on medical treatment.
- Accompanies victims to hospital as driver and/or provides continued pre-hospital care to patients in the emergency medical vehicle.
- Makes complete report to physician of incident and treatment administered.
- Files complete reports (e.g., patient care reports, insurance forms, etc.) on each case on a timely fashion by manual and automated methods.
- Works all shifts, weekends and holidays.
- Maintains adequate stock of equipment and supplies; washes and disinfects medical equipment; washes and cleans emergency medical vehicles.
- Performs vehicle/equipment checks as required.
- Performs activities and functions of other personnel as assigned or required.
- Performs such other related tasks and duties that are assigned or required.

EMT Position Duties

- Drives or accompanies driver in emergency medical vehicle to site of emergency as informed by dispatcher or District Chief.
- Maintains radio or other contact as necessary with the Public Safety Dispatch, EMS Command Staff, EMS Physician, receiving hospitals, and other agencies as necessary. Follows the EMS Physician's instructions on medical treatment.
- Administers treatment to ill or injured patients, accompanies patients to the hospital as a driver and or provides continued pre-hospital care to patient in the emergency medical vehicle.
- Lifts and carries patients on stretchers from routine and difficult access areas.
- Completes patient care reports and all other required documentation (signature forms, insurance forms, etc.) electronically and hard copy as required.
- Maintains adequate stock of equipment and supplies; washes and disinfects medical equipment; washes and cleans emergency medical vehicles.
- Works all shifts, weekends and holidays.
- Ensures vehicles are always in proper working order; reports any vehicle malfunctions to District Chief.
- Performs activities and functions of other personnel as assigned or required.

EXHIBIT B
Western Pennsylvania Reginal Data Center
2022 Municipalities
That Dispatch Their Own Police, Fire, and EMS Services

Community	Police	Fire	EMS
Bethel Park	Bethel Park	Bethel Park	Bethel Park
Coraopolis	Coraopolis	ACES 9-1-1	ACES 9-1-1
Edgeworth	Edgeworth	ACES 9-1-1	ACES 9-1-1
Findlay	Findlay	Findlay	ACES 9-1-1
McDonald	Washington County	Washington County	Washington County
Monroeville	Monroeville	Monroeville	Monroeville
Moon	Moon	Moon	ACES 9-1-1
North Versailles	North Versailles	ACES 9-1-1	ACES 9-1-1
South Park	ACES 9-1-1	ACES 9-1-1	South Park
Trafford	Westmoreland County	Westmoreland County	Westmoreland County
Upper St. Clair	Upper St. Clair	Upper St. Clair	Upper St. Clair
West Mifflin	West Mifflin	ACES 9-1-1	ACES 9-1-1
Whitehall	Whitehall	ACES 9-1-1	ACES 9-1-1

EXHIBIT C
Patient Care Report Example

Patient Record 69631023 Generated 07/28/22 01:44PM EST Page: 1 of 1

PRID: 69631023 **County Dispatch #:** E210139233 **EMS CCR #:** PGHE210032830

Service: City of Pittsburgh Emergency Medical Service
Base: Medic 01
Unit: 5101
EMD: Yes, Pre-Arrival Instr. - 13A1
Dispatched As: Diabetic Problem
Mass Casualty: Not Recorded
Vehc. Disp. GPS: 40.455296,-79.90545
Type of Svc: Emergency Response (Primary Response Area) Unscheduled
Dispatch Priority: E 2
Response Mode: Emergent (Immediate Response)
Disposition: Cancelled enroute by EMS

Referring / Scene: WALGREENS PGH PENN
7628 PENN AVE
Pittsburgh, PA 15221-2114
Allegheny County
United States
Requester: ANN
Ref. GPS: 40.4466805,-79.894532

Date: July 26, 2021
Team: ALS
Crew 1: Other (Not Listed)
* [redacted]
Paramedic
Crew 2: Driver/Pilot - Response
[redacted]
Paramedic
* designates an ALS Provider
Transport Mode:

No Patient Assessed

Times

Received:	12:35
Dispatch:	12:37
Cancelled:	12:38
Available:	17:04

Consent Signed: No
PCS / Medical Necessity Signed: No

Scene Information

Description: dispatched to walgreen's for a diabetic having diabetic issues. Cancelled enroute. Medic 11 returned into service and took detail. No Pt contact. returned back into service.

Exposed: [redacted]
Suspected Exposure/Injury: No

Exposed: [redacted]
Suspected Exposure/Injury: No

Chief Complaint (Category: No Patient)

ALS Assessment: Completed for Suspected Illness

History of Present Illness

[redacted] *Electronically Signed on 07/26/2021 17:06:31 EST*

[redacted] _____

EXHIBIT D
2021 Total Number of EMS Calls per Neighborhood
Most to Least

Neighborhood	Calls	Neighborhood	Calls	Neighborhood	Calls
Downtown (also known as *the Golden Triangle/*Chinatown/*Cultural District)*	6,376	Glen Hazel	1,106	Southside Slopes	372
Carrick	3,463	Marshall-Shadeland (also known as *Brightwood* and *Woods Run*)	1,043	Central Northside and Mexican War Streets	370
Southside Flats/ South Side Work	3,210	Squirrel Hill North	889	Fineview	354
Bluff (also known as *Uptown* or *Soho*)	2,356	Spring Hill/ City View	880	Oakwood	322
Squirrel Hill South/ / Summerset	2,226	Duquesne Heights	785	South Shore/ Station Square	307
Knoxville	2121	Garfield/The Valley/ Hilltop	779	Fairywood	305
Brookline	1,991	Chateau	774	Oakland West	296
Middle Hill	1,958	Elliott	773	Windgap	280
Shadyside	1,943	Crafton Heights	768	Arlington Heights	247
Oakland North	1,887	Arlington	735	Hays	247
East Liberty	1,767	Oakland Central	725	Polish Hill	243
N. Shore	1,744	Banksville	716	Esplen	236
Mount Washington/ Chatham Village	1,696	Beltzhoover	708	Bon Air	224
Homewood South	1,695	Waterworks	699	Spring Garden	223
Beechview	1,691	Crawford-Hill	695	Mt. Oliver (not to be confused with the neighboring Borough of Mount Oliver)	215
East Allegheny (also known as *Deutschtown*)	1,663	Perry North (also known as *Observatory Hill*)	654	West End	180
Brighton Heights	1,571	Northview Heights	595	Allentown	179
South Oakland/Panther Hollow	1,555	Point Breeze North	590	California-Kirkbride	179

EXHIBIT D (continued)
2021 Total Number of EMS Calls per Neighborhood
Most to Least

Neighborhood	Calls	Neighborhood	Calls	Neighborhood	Calls
Bloomfield	1,451	Stanton Heights	567	East Carnegie	131
Perry South (also known as *Perry Hilltop*)	1,382	Point Breeze/Park Place	565	Brunots Island	129
Allegheny Center	1,368	Terrace Village	553	Lawrenceville Central	129
Greenfield/Four Mile Run	1,358	Homewood West	530	Swisshelm Park/ Duck Hollow	120
Highland Park	1,355	Morningside	524	Chartiers	113
Sheraden	1,349	Lincoln Place	510	Summer Hill	105
Lincoln-Lemington-Belmar	1,303	Overbrook	509	Allegheny West	101
Lawrenceville Lower	1,290	Troy Hill/Washington's Landing	501	New Homestead	98
East Hills	1,253	Manchester	493	Regent Square	98
Larimer	1,218	Lawrenceville Upper	398	Friendship	88
Hazelwood	1,184	Upper Hill	388	Ridgemont	52
Mt. Oliver Borough	1,154	Westwood	377	Bedford Dwellings	38
Homewood North	1,113	Strip District	374	Washington Landing	28

Note: St. Clair data was not listed in the CAD report

EXHIBIT E
Map of Pittsburgh Neighborhoods

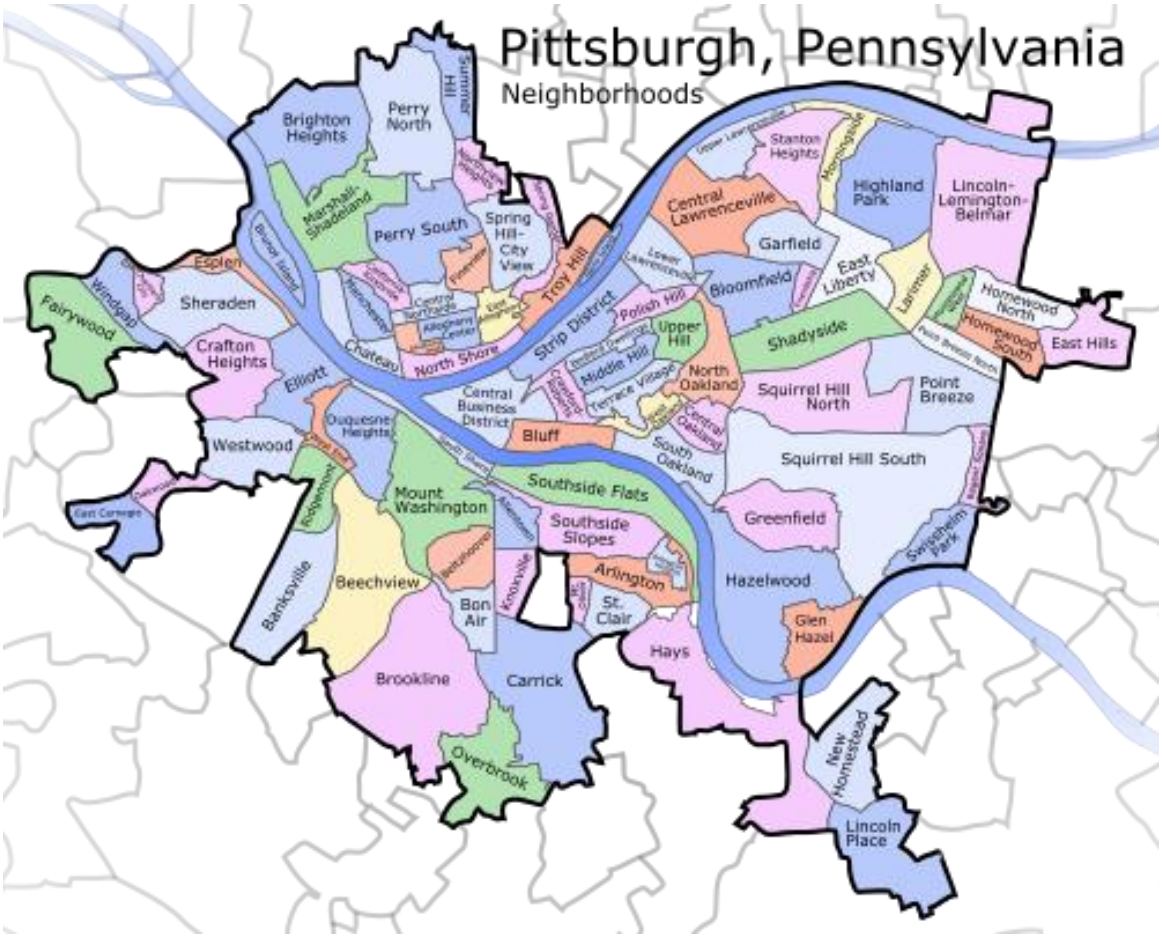


EXHIBIT F
Additional Urgent Care vs. Emergency Room
Billboard Examples

EXHIBIT G
Transport Signature Form Example

Transport Signature Form

Patient Name
First _____ Last _____ Transport Date: _____ Run #

I request that payment of authorized Medicare, Medicaid, or any other insurance benefits be made on my behalf to **City of Pittsburgh Bureau of EMS ("Pittsburgh EMS")** for any services provided to me by **PITTSBURGH EMS** now, in the past, or in the future. I understand that I am financially responsible for the services and supplies provided to me by **PITTSBURGH EMS**, regardless of my insurance coverage, and in some cases, may be responsible for an amount in addition to that which was paid by my insurance. I agree to immediately remit to **PITTSBURGH EMS** any payments that I receive directly from insurance or any source whatsoever for the services provided to me and I assign all rights to such payments to **PITTSBURGH EMS.**

I authorize **PITTSBURGH EMS** to appeal payment denials or other adverse decisions on my behalf without further authorization. I authorize and direct any holder of medical information or other relevant documentation about me to release such information to **PITTSBURGH EMS** and its billing agents, the Centers for Medicare and Medicaid Services, and/or any other payers or insurers, and their respective agents or contractors, as may be necessary to determine these or other benefits payable for any services provided to me by **PITTSBURGH EMS**, now, in the past, or in the future. A copy of this form is as valid as an original.

Privacy Practices Acknowledgment: by signing below, I acknowledge that I received **PITTSBURGH EMS's** Notice of Privacy Practices.

SIGNATURE SECTION:

ONE of the following three sections MUST be completed.

SECTION I – PATIENT SIGNATURE

The patient must sign here unless the patient is physically or mentally incapable of signing.

X [redacted]
Patient Signature or Mark _____ Date

If the patient signs with an "X" or other mark, someone should sign below as a witness. This can be an ambulance crew member.

X _____ _____
Witness Signature Date

_____
Witness Printed Name

NOTE: if the patient is a minor, the parent or legal guardian should sign in this section.

SECTION II – AUTHORIZED REPRESENTATIVE SIGNATURE

Complete this section **only** if the patient is physically or mentally incapable of signing.

Reason the patient is physically or mentally incapable of signing:

_____

Authorized representatives include **only** the following individuals (check one):

☐ Patient's Legal Guardian ☐ Patient's Health Care Power of Attorney
☐ Relative or other person who receives government benefits on behalf of patient
☐ Relative or other person who arranges treatment or handles the patient's affairs
☐ Representative of an agency or institution that furnished care, services or assistance to the patient.

I am signing on behalf of the patient. I recognize that signing on behalf of the patient is not an acceptance of financial responsibility for the services rendered.

X _____ _____ _____
Representative Signature Date Printed Name of Representative

_____
Representative's Address

SECTION III - AMBULANCE CREW AND RECEIVING FACILITY SIGNATURES

Complete this section **only** if: (1) the patient was physically or mentally incapable of signing, **and** (2) no authorized representative (Section II) was available or willing to sign on behalf of the patient at the time of service.

A. Ambulance Crew Member Statement (must be completed by crew member at time of transport)

My signature below indicates that, at the time of service, the patient named above was physically or mentally incapable of signing, and that none of the authorized representatives listed in Section II of this form were available or willing to sign on the patient's behalf. My signature is not an acceptance of financial responsibility for the services rendered.

Reason pt incapable of signing: _____

Name and Location of Receiving Facility: _____ Time at Receiving Facility: _____

X _____ _____ _____
Signature of Crew member Date Printed Name of Crew member

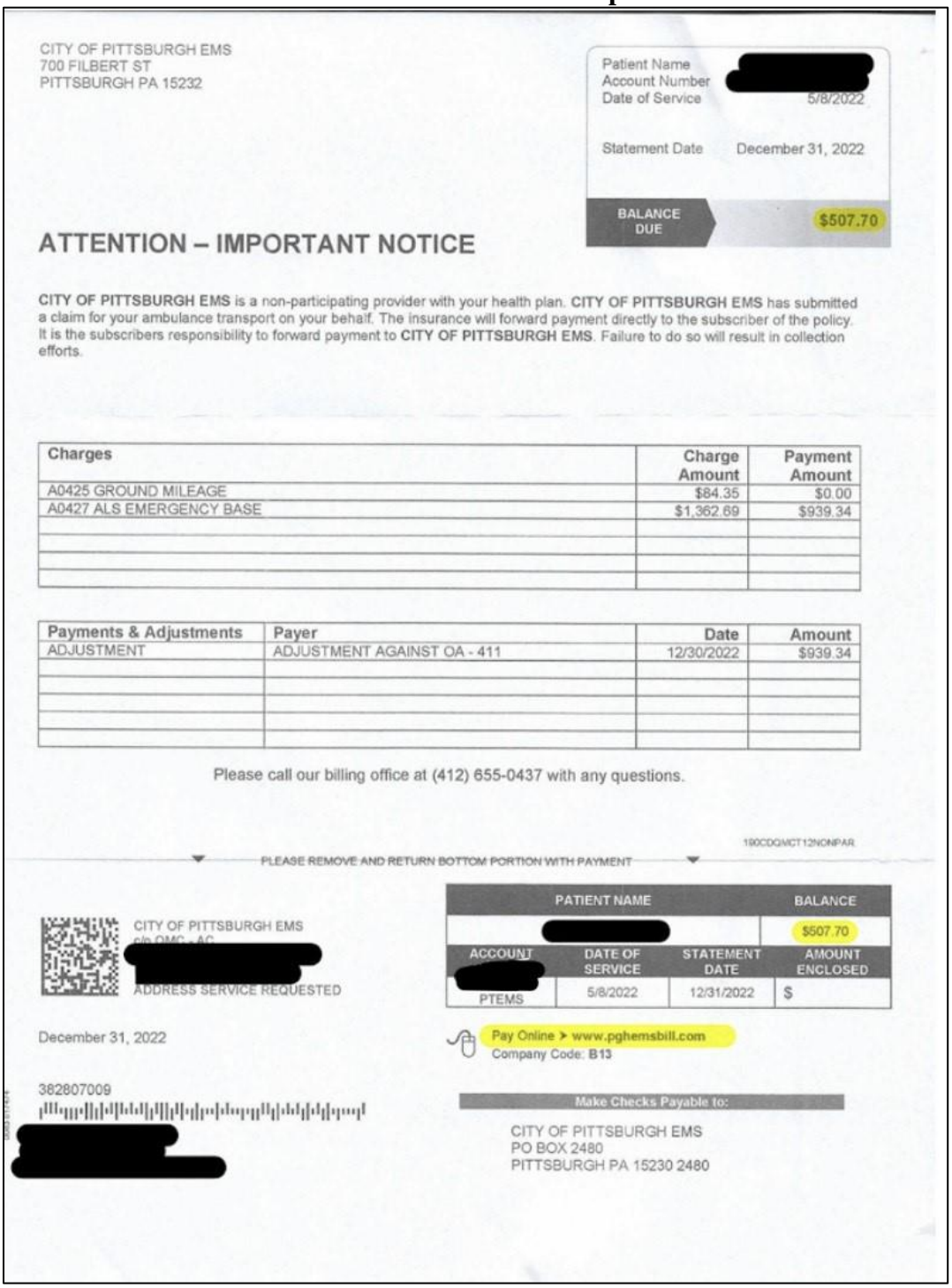
B. Receiving Facility Representative Signature

The patient named on this form was received by this facility at the date and time indicated above.
My signature is not an acceptance of financial responsibility for the services rendered to this patient.

X _____ _____ _____
Signature of Receiving Facility Representative Date Printed Name and Title of Receiving Facility Representative

Updated 12/30/21 User bears all responsibility for compliance with all applicable laws and regulations.

EXHIBIT G-1
Actual Patient Bill Example



CITY OF PITTSBURGH EMS
700 FILBERT ST
PITTSBURGH PA 15232

Patient Name [redacted]
Account Number
Date of Service 5/8/2022

Statement Date December 31, 2022

BALANCE DUE $507.70

ATTENTION – IMPORTANT NOTICE

CITY OF PITTSBURGH EMS is a non-participating provider with your health plan. **CITY OF PITTSBURGH EMS** has submitted a claim for your ambulance transport on your behalf. The insurance will forward payment directly to the subscriber of the policy. It is the subscribers responsibility to forward payment to **CITY OF PITTSBURGH EMS**. Failure to do so will result in collection efforts.

Charges	Charge Amount	Payment Amount
A0425 GROUND MILEAGE	$84.35	$0.00
A0427 ALS EMERGENCY BASE	$1,362.69	$939.34

Payments & Adjustments	Payer	Date	Amount
ADJUSTMENT	ADJUSTMENT AGAINST OA - 411	12/30/2022	$939.34

Please call our billing office at (412) 655-0437 with any questions.

190CDGMCT12NONPAR

PLEASE REMOVE AND RETURN BOTTOM PORTION WITH PAYMENT

CITY OF PITTSBURGH EMS
c/o OMC - AC
[redacted]
ADDRESS SERVICE REQUESTED

December 31, 2022

382807009
[redacted]

PATIENT NAME			BALANCE
[redacted]			$507.70
ACCOUNT	DATE OF SERVICE	STATEMENT DATE	AMOUNT ENCLOSED
[redacted] PTEMS	5/8/2022	12/31/2022	$

Pay Online > www.pghemsbill.com
Company Code: B13

Make Checks Payable to:

CITY OF PITTSBURGH EMS
PO BOX 2480
PITTSBURGH PA 15230 2480

EXHIBIT G-2
Example Documents sent to Patients from Quick Med Claims,
(Billing Contractor for EMS)
Non-Participating Provider Letter

«Insert64»
«Insert65» «Insert66»
«Insert67» «Insert68» «Insert69»

[redacted] 03.23.2022 0637

Patient Name	«Insert2» «Insert3»
Account Number	«Insert6»
Date of Service	«Insert8»
Statement Date	March 22, 2022
BALANCE DUE	«Insert84»

ATTENTION – IMPORTANT NOTICE

«Insert64» is a non-participating provider with your health plan. **«Insert64»** has submitted a claim for your ambulance transport on your behalf. The insurance will forward payment directly to the subscriber of the policy. It is the subscribers responsibility to forward payment to **«Insert64»**. Failure to do so will result in collection efforts.

«ClientInsert9»

Charges	Charge Amount	Payment Amount
«Insert20»	«Insert21»	«Insert22»
«Insert23»	«Insert24»	«Insert25»
«Insert26»	«Insert27»	«Insert28»
«Insert29»	«Insert30»	«Insert31»
«Insert32»	«Insert33»	«Insert34»
«Insert35»	«Insert36»	«Insert37»

Payments & Adjustments	Payer	Date	Amount
«Insert39»	«Insert40»	«Insert38»	«Insert41»
«Insert43»	«Insert44»	«Insert42»	«Insert45»
«Insert47»	«Insert48»	«Insert46»	«Insert49»
«Insert51»	«Insert52»	«Insert50»	«Insert53»
«Insert55»	«Insert56»	«Insert54»	«Insert57»
«Insert59»	«Insert60»	«Insert58»	«Insert61»

Please call our billing office at «ClientInsert4» with any questions.

805CDQMCT12NONPAR

PLEASE REMOVE AND RETURN BOTTOM PORTION WITH PAYMENT

«INSERT70»
c/o QMC - AC
«Insert71» «Insert72»
«Insert73», «Insert74» «Insert75»
ADDRESS SERVICE REQUESTED

PATIENT NAME			BALANCE
«Insert2» «Insert3»			«Insert84»
ACCOUNT NUMBER	DATE OF SERVICE	STATEMENT DATE	AMOUNT ENCLOSED
«Insert6»	«Insert8»	03/22/2022	$

March 22, 2022

«IMBSerialNumber»

«FullName»
«AttnLine»
«Address1»
«Address2»
«City» «State» «ZipCode»-«ZipPlus4»

Pay Online ➤ **«ClientInsert3»**
Company Code: **«ClientInsert1»**

Make Checks Payable to:

«INSERT77»
«Insert78»
«Insert79» «Insert80» «Insert81» «Insert82»

EXHIBIT G-3
Request for Insurance and Authorization Example

[redacted]07.19.22 0631

«Insert64»
«ClientInsert4»

«ClientInsert1»
«INSERT64»
c/o QMC - AC
1400 LEBANON CHURCH RD
Pittsburgh PA 15236-1455
ADDRESS SERVICE REQUESTED

REMIT TO:
«INSERT77»
«Insert78»
«Insert79» «Insert80» «Insert81»-«Insert82»

July 18, 2022

«IMBSerialNumber»

«FullName»
«AttnLine»
«Address1»
«Address2»
«City» «State» «ZipCode»-«ZipPlus4»

PATIENT NAME		BALANCE
«Insert2» «Insert3»		«Insert84»
ACCOUNT NUMBER	DATE OF SERVICE	AMOUNT ENCLOSED
«Insert6»	«Insert8»	No Payment Due

1CDQMCT12COPNEEDINS

REQUEST FOR INSURANCE AND AUTHORIZATION

Dear «Insert2» «Insert3»,

To properly receive these payments, WE NEED YOUR HELP. Please complete and sign this form and return it to us in the envelope provided AS SOON AS POSSIBLE. City of Pittsburgh Ordinance #9 pr 1981, Chapter 171, Section 171 02C requires you to comply with this request. Insurance payments for your ambulance transport directly support Pittsburgh's Emergency Medical Service.
We do not have on record any information to forward this claim to your insurance provider on your behalf. If this service was related to an automobile or workers compensation related accident, please provide that information to us.

«Insert94»

---

1. Update Information Online: www.emsbillpay.com

Enter Account Number: «Insert6»
Enter Date of Service:«Insert8»
Company Code: «ClientInsert1»

2. Return via Mail

Complete and sign this form and return to our billing office in the envelope provided

Primary Health Insurance

Ins. Company:_____
Claims Address:_____
City/State/Zip:_____
Phone #:_____
Subscriber ID#:_____
Group #:_____
Subscriber Date of Birth: _____

Secondary Health/Motor Vehicle/Work Comp Insurance

Ins. Company: _____
Claims Address:_____
City/State/Zip: _____
Phone #: _____
Subscriber ID or Claim #:_____
Subscriber Date of Birth: _____

INSURANCE AUTHORIZATION

I request that payment of authorized Medicare or other insurance benefits be made either to me or on my behalf to «Insert64» for any services furnished me by that health service supplier now, in the past, or in the future. I authorize any holder of medical information about me to release to the Centers for Medicare and Medicaid Services and its agents or other insurance companies any information needed to determine these benefits or the benefits payable for related services now, in the past, or in the future.

I also assign «Insert64» the right to appeal all claims determinations or denials on my behalf. I understand that I am financially responsible for the services rendered by «Insert64» and agree to immediately remit all payment I receive from my insurance or other benefits provider to «Insert64». A copy of this authorization is as valid as the original.

SIGNATURE: _____ **DATE**: _____

**********Complete below if the patient is unable to sign**********

REASON WHY PATIENT CANNOT SIGN: _____

RELATIONSHIP TO PATIENT: (if unable to sign) _____
(I understand if I am signing on behalf of the patient, that I am not financially responsible for payment)

EXHIBIT G-4
Request for Insurance and Secondary Insurance Information Example

1400 LEBANON CHURCH RD
Pittsburgh PA 15236-1455
ADDRESS SERVICE REQUESTED

REMIT TO:
«INSERT64»
c/o QMC – AC
1400 LEBANON CHURCH RD
Pittsburgh PA 15236-1455

November 11, 2022

«IMBSerialNumber»

«FullName»
«AttnLine»
«Address1»
«Address2»
«City» «State» «ZipCode»-«ZipPlus4»

PATIENT NAME		BALANCE
«Insert2» «Insert3»		«Insert84»
ACCOUNT NUMBER	DATE OF SERVICE	AMOUNT ENCLOSED
«Insert6»	«Insert8»	

1CDQMCT12NEED_INS

REQUEST FOR INSURANCE AND AUTHORIZATION

Our records indicate you were treated by «Insert64» on the above date. We do not have on record any information to forward this claim to your insurance carrier. Please provide your insurance information to us online using the options listed below, or by sending this completed form to our billing office. If this service was related to an automobile or workers compensation related accident, please provide that information to us along with your health insurance information.

If you do not have insurance, the balance due is your responsibility and payment is due upon receipt of this form.

«Insert94»

1. Scan QR Code

Account Number: «Insert6»
Date of Service: «Insert8»
Company Code: «ClientInsert1»

ONLINE

2. Online www.emsbillpay.com

Account Number: «Insert6»
Date of Service: «Insert8»
Company Code: «ClientInsert1»

Primary Health Insurance

Ins. Company:_____
Claims Address:_____
City/State/Zip:_____
Phone #:_____
Subscriber ID#:_____
Group #:_____
Subscriber Date of Birth: _____

Secondary Health/Motor Vehicle/Work Comp Insurance

Ins. Company: _____
Claims Address:_____
City/State/Zip: _____
Phone #: _____
Subscriber ID or Claim #:_____
Subscriber Date of Birth: _____

I authorize the submission of a claim to Medicare, Medicaid, or any other payer for any services provided to me by «INSERT64» now, in the past, or in the future, until such time as I revoke this authorization in writing. I understand that I am financially responsible for the services and supplies provided to me by «INSERT64», regardless of my insurance coverage, and in some cases, may be responsible for an amount in addition to that which was paid by my insurance. I agree to immediately remit to «INSERT64» any payments that I receive directly from insurance or any source whatsoever for the services provided to me and I assign all rights to such payments to «INSERT64». I authorize «INSERT64» to appeal payment denials or other adverse decisions on my behalf without further authorization. I authorize and direct any holder of medical, insurance, billing or other relevant information about me to release such information to «INSERT64» and its billing agents, the Centers for Medicare and Medicaid Services, and/or any other payers or insurers, and their respective agents or contractors, as may be necessary to determine these or other benefits payable for any services provided to me by «INSERT64», now, in the past, or in the future. I also authorize «INSERT64» to obtain medical, insurance, billing and other relevant information about me from any party, database or other source that maintains such information.

SIGNATURE OF PATIENT: _____ **DATE:** _____

If the patient is unable to sign, please complete the following information:

STATE REASON PATIENT UNABLE TO SIGN FOR SELF: _____

SIGNATURE OF PATIENT REPRESENTATIVE: _____ **DATE:** _____

RELATIONSHIP TO PATIENT: _____

PRINTED NAME OF REPRESENTATIVE: _____

ADDRESS OF REPRESENTATIVE: _____

EXHIBIT G-5
Signature Required for Medicare Submission Example

[redacted] 07.19.22 0634

«Insert64»
«ClientInsert4»

«ClientInsert1»
«INSERT64»
c/o QMC - AC
1400 LEBANON CHURCH RD
Pittsburgh PA 15236-1455
ADDRESS SERVICE REQUESTED

REMIT TO:
«INSERT77»
«Insert78»
«Insert79» «Insert80» «Insert81»-«Insert82»

July 18, 2022

«IMBSerialNumber»

«FullName»
«AttnLine»
«Address1»
«Address2»
«City» «State» «ZipCode»-«ZipPlus4»

PATIENT NAME «Insert2» «Insert3»		BALANCE «Insert84»
ACCOUNT NUMBER «Insert6»	DATE OF SERVICE «Insert8»	STATEMENT DATE 07/18/2022

> > > > PLEASE FOLD ALONG DOTTED LINE AND RETURN THIS ENTIRE FORM IN THE ENVELOPE PROVIDED < < < <

Dear «FullName»,

In compliance with Medicare regulations, your signature is required before we can submit this claim to Medicare. **No payment is due at this time.**

Please complete the signature section below and return the entire form to our office in the envelope provided. Or you can submit your signature online by visiting www.quickmedclaims.com and clicking the PATIENT ACCESS link. The company code is «ClientInsert1».

Thank you for your assistance.

«INSERT64» Billing Office

I authorize the submission of a claim to Medicare, Medicaid, or any other payer for any services provided to me by «Insert64» now, in the past, or in the future, until such time as I revoke this authorization in writing. I understand that I am financially responsible for the services and supplies provided to me by «Insert64», regardless of my insurance coverage, and in some cases, may be responsible for an amount in addition to that which was paid by my insurance. I agree to immediately remit to «Insert64» any payments that I receive directly from insurance or any source whatsoever for the services provided to me and I assign all rights to such payments to «Insert64». I authorize «Insert64» to appeal payment denials or other adverse decisions on my behalf without further authorization. I authorize and direct any holder of medical, insurance, billing or other relevant information about me to release such information to «Insert64» and its billing agents, the Centers for Medicare and Medicaid Services, and/or any other payers or insurers, and their respective agents or contractors, as may be necessary to determine these or other benefits payable for any services provided to me by «Insert64», now, in the past, or in the future. I also authorize «Insert64» to obtain medical, insurance, billing and other relevant information about me from any party, database or other source that maintains such information.

SIGNATURE OF PATIENT: _____ **DATE:** _____

If the patient is unable to sign, please complete the following information:

STATE REASON PATIENT UNABLE TO SIGN FOR SELF: _____

SIGNATURE OF PATIENT REPRESENTATIVE: _____ **DATE:** _____

RELATIONSHIP TO PATIENT: _____

PRINTED NAME OF REPRESENTATIVE: _____

ADDRESS OF REPRESENTATIVE: _____

1CDQMCT12NEED_SIG **You can also add or update your information through our patient access site.**
Online at ➢ www.quickmedclaims.com
Click the Patient Access button and follow the prompts
Company Code: «ClientInsert1»

Ed Gainey
MAYOR

Amera Gilchrist
CHIEF

CITY OF PITTSBURGH

BUREAU OF EMERGENCY MEDICAL SERVICES
EMERGENCY MEDICAL SERVICES HEADQUARTERS

July 2023

Michael E. Lamb, City Controller Office of the City Controller
414 Grant Street
Pittsburgh, PA 15219

RE: Performance Audit on Emergency Medical Services

Dear Controller Lamb,

The Department of Public Safety Bureau of Emergency Medical Services participated in an extensive 2021 performance audit, conducted by the City's Controller office. Below you will find the responses from EMS administration regarding suggestions provided to assist in maintaining optimum service to the City's residents. Statistical information provided by administration, shed light on system optimization and ideas for improving the bureau over all.

RECOMMENDATION 1:

The EMS administration should work with the City of Pittsburgh's Human Resources to explore ways to increase EMT applicants for the City.

One suggestion would be to start an apprenticeship program for interested individuals who might not have the means to pursue training. This program would be offered like that of the police and fire recruits. Recruits are hired by the City and receive on the job training.

Another suggestion would be to work with an organization that offer Emergency Medical Technician certification and ask them to promote (via flyers, guest speakers, social media etc.) working for Pittsburgh EMS. It should be pointed out to prospective employees that, if hired by Pittsburgh's EMS as an EMT, and after a probationary period, the individual could participate in the City's tuition reimbursement program to complete the advanced paramedic certification.

Response:

The Bureau of EMS currently works diligently with the City of Pittsburgh's Department of Human Resources to locate potential EMS candidates for hire.

The new EMS Administration has started formulating a plan to create both an apprenticeship program and increase the current Training Division to a Training Academy similar to the Bureaus of Police and Fire academies.

Both of these plans would require commitments from the City to increase both the EMS budgetary amounts and personnel staffing levels.

The Bureau of EMS Training Division currently attends job fairs at the educational locations.

RECOMMENDATION 2:

The EMS administration should contact the Department of Innovation & Performance (I&P), the City's computer administrator, about changing or eliminating the above linked website. The information is incorrect and might confuse a potential applicant delaying their application process.

Response:

EMS has sent an email to the I&P for correction. 30JUN2023 at 0940 hours. I&P replied at 1109 hours on 30JUN, this page has been removed. It will take a couple to be no longer viewable.

RECOMMENDATION 3:

The Bureau of Emergency Medical Services administration should continue to publish annual operations summaries on their website, with the support of the Department of Public Safety. These operation summaries provide transparency with readily available information to the public about EMS' operations and their importance to the community.

Response:

EMS will strive to ensure the Annual Operational Summary to added to the EMS webpage.

RECOMMENDATION 4:

Pittsburgh EMS administration should update their organizational chart to accurately depict EMS's three divisions, their staff, and include the crew chiefs, as well as the special events operations.

Response:

EMS will provide the auditor an updated organization chart.

RECOMMENDATION 5:

The EMS administration should work, with the Office of Management and Budget and members of City Council to keep Pittsburgh's EMS services adequately staffed. Recruitment efforts through high schools, local colleges, and, if possible, financial incentives should be explored. Signing bonuses are given in many professions and this may be something that can be used to enlist EMTs and paramedics. In the future, as applications increase, the hiring of a more diversified staff should be a goal.

Response:

EMS agrees with the recommendation.

RECOMMENDATION 6:

EMS administration should work with I&P to add a map with addresses of all medic station locations on EMS's website. It can be found on the Department of City Planning website. This would help City residents to see where services are located.

Response:

EMS will work with I&P on this recommendation.

RECOMMENDATION 7:

EMS administration should work to improve the response times for high-priority calls to meet the suggested standard response time of 8 minutes and 59 seconds. This includes cardiac emergencies and stroke patients' response times; averages were over a minute more than the suggested standard.

Response:

EMS agrees that response times should be lowered. Response times could be lowered if EMS had additional medic units or BLS ambulances in service/added. As for responses taking longer than 30 minutes are most likely errors in documentation in CAD. Also, cardiac arrest is not the same as chest pains or heart problems in CAD and response times could be different.

RECOMMENDATION 8:

EMS administration should work with the Department of Public Safety, and local health care organizations, via public service announcements, to educate the public to determine when there is a medical emergency versus a non-emergency. This would help to guide the public to go to an Urgent Care facility for a non-emergency, versus calling 911. Eliminating non-emergency visits to the emergency room will reduce costs for everyone. This initiative should compose of both traditional and digital marketing to ensure the largest outreach possible.

Response:

EMS agrees with the recommendation. This tasking could be handled by OCHS.

RECOMMENDATION 9:

EMS administration should continue to request from OMB that more paramedic positions be added to the budget. This would reduce workloads and decrease overtime expenses.

Response:

EMS agrees with the recommendation and would like to place in service two more ALS medic units and one more BLS ambulance.

RECOMMENDATION 10:

EMS administration should work with the City's I&P Department to add information to their website explaining the billing process.

The billing vendor's information should include contact information and all possible charges should be listed. The site should also explain that City residents are not responsible for any payment their health insurance does not cover. With the exception that when the patient receives a payment from an insurance company, the city resident is required to submit it to City EMS. Failure to do so results in the patient's bill being sent to a collection agency.

Response:

The Bureau will work with I&P to add billing information to the EMS webpage.

RECOMMENDATION 11:

EMS administration should work with the new fleet manager to create a fleet replacement strategy and not deviate from it. This will ensure adequate and safe vehicles for EMS's future.

Response:

EMS has requested new vehicles every year and will continue to do so. EMS has a replacement strategy for the older EMS vehicle but has not received vehicle purchase allowance confirmation from the Fleet Manager.

RECOMMENDATION 12:

EMS administration should contact the grant writing department of 0MB and encourage them to explore the possibility of securing grant money for purchasing new medic units and ambulances to replace older models. One example of available State grants can be found at the following link.

Response:

EMS will be in contact with the grant writing department of OMB. EMS had applied for grants in the past with little awarded. Grants are granted for equipment typically and not vehicles.

RECOMMENDATION 13:

The Department of Public Safety EMS administration should more adequately track the number of calls that EMS receives from college and university operated housing. This would provide City administrators the data to determine how often City public safety services serve the college and university community and help justify Payment in Lieu of Taxes (P.I.L.0.T.) from these non-profits.

Response:

The Bureau will provide data on responses to colleges and universities upon request.

RECOMMENDATION 14:

Pittsburgh EMS administration should keep a record of all community paramedics visits. Keeping a record of this service helps justify the program's existence and will determine if changes are necessary.

Response:

PGH EMS does keep track of these interactions. EMS has multiple paramedics that work closely with OCHS.

RECOMMENDATION 15:

Pittsburgh EMS administration should work with the City's I&P Department to add information on EMS's website, about the Leave Behind Narcan and Prehospital Buprenorphine Pilot Program. People may not know about either program, and having it published on the webpage will increase public awareness. The EMS website should include information about how to spot an overdose, access Narcan, and how to administer it.

Response:

EMS will work with I&P to add this information to the EMS website.

It is the hope of EMS administration the responses provided by our bureau are taken under consideration and carry the necessary weight to make the appropriate changes for our service.

Sincerely,

Amera Gilchrist
Chief of EMS