Performance Audit:

Atlanta Fire Rescue Department Inventory Management of Medical Supplies

May 2019

City Auditor's Office

City of Atlanta

File #19.01

Why We Did This Audit

We undertook this audit following our 2018 investigation of theft of fuel involving the Atlanta Fire Rescue Department, which identified weak inventory controls. Several fire stations operate advanced life support vehicles that carry medical supplies, including controlled substances. Because of the weaknesses in controls over fuel, we chose to audit current inventory controls over medical supplies.

What We Recommended

To strengthen safeguards against drug and medical supply diversion and to improve inventory management, the Atlanta Fire Rescue Department should:
- update its policies and procedures to include procurement and disposal procedures
- equip all emergency vehicles with locked compartments for medication bags
- require dual controls to access controlled substances storage
- review controlled substances logs and medications used forms monthly for completeness and accuracy and address any discrepancies
- consolidate procurement to help decrease the amount of excess inventory
- implement an electronic inventory management system to mitigate inventory control risks

For more information regarding this report, please use the "contact" link on our website at www.atlaudit.org

Performance Audit:

Atlanta Fire Rescue Department

Inventory Management of Medical Supplies

What We Found

Poor recordkeeping prevented the Atlanta Fire Rescue Department from accurately and completely tracking drugs and medical supplies, including controlled substances from purchase to disposal. We identified control weaknesses in both field and airport locations. Three to five vials of Versed, a controlled substance, were unaccounted for in field locations due to missing or incomplete log entries. The controlled substances log entries at airport locations were missing transaction dates which made inventory tracking impossible.

Emergency medical services at both field and airport locations maintained a significant number of expired drugs and medical supplies on hand. Over 80% of controlled substances at the airport were expired. The department has neither specified in its procedures on how to dispose of expired medications nor has it defined the frequency of disposal. We recommend that the department update its policies and procedures.

Federal and state laws require emergency service providers to track controlled substances from purchase through disposal, store drugs securely, perform inventory counts, track amounts administered and disposed of, and maintain accurate and complete records. Without complete records, drugs and medical supplies, particularly controlled substances, are susceptible to theft or diversion.

To mitigate risks that drugs or medical supplies may be diverted, lost, or stolen, we recommend that the department implement an electronic inventory management system. Airport locations purchased part of an inventory system but has yet to implement it. Until a system is implemented, we recommend that the Atlanta Fire Rescue Department conduct a 100% inventory count of all drugs and medical supplies at emergency medical services locations. The department should also enforce completion of all required documents, including the controlled substances logs, medication used forms, medication bag check-offs, and transfer of custody forms to track medical inventory.

Management Responses to Audit Recommendations

Summary of Management Responses		
Recommendation #1:	We recommend that the Atlanta Fire Rescue Department update its policies and procedures to include specific language that describes procurement and disposal procedures.	
Response & Proposed Action:	The standard operational procedures for pharmaceutical bag replacement and EMS supplies ordering and inventory are in draft.	Agree
Timeframe:	July 2019	
Recommendation #2:	We recommend that the Atlanta Fire Rescue Department provide field locations with assigned medication bags and store controlled substances in a clear case in a separate compartment from other drugs and medical supplies.	
Response & Proposed Action:	The EMS division has identified a clear container to store controlled substances that will fit into our existing medical bags. Once ordered the containers will take several weeks to arrive, stock, and distribute throughout the department. The department asks that the recommendation to provide field locations with assigned medication bags be modified as it is like recommendation 3 (to discontinue decommissioning bags in the field). The department agrees with the recommendation to store controlled substances in a clear case.	Partially Agree
Timeframe:	June 2019	
Recommendation #3:	We recommend that the Atlanta Fire Rescue Department discontinue bag decommissioning in field locations.	
Response & Proposed Action:	Due to the logistical resources needed to support field operations, in addition to security concerns regarding the transport of controlled medications to supply thirty-one fire station locations across the City, the department must continue to decommission bags in field locations.	Disagree
Timeframe:	N/A	
Recommendation #4:	We recommend that the Atlanta Fire Rescue Department ensure all emergency vehicles are equipped with locked compartments to store medication bags.	
Response & Proposed Action:	An apparatus audit determined that there are eight units in Field Operations that will require locking solutions. Field Ops has checked the lock numbers and will coordinate with fleet services for replacement keys. Airport Operations has four units that will require locking solutions. The Airport Division is coordinating with Fleet Services at the airport to request a vendor quote for lock installation.	Agree
Timeframe:	July 2019	

Recommendation #5:	We recommend that the Atlanta Fire Rescue Department require dual controls when accessing the controlled substances storage in procedures to limit the risk of diversion.	
Response & Proposed Action:	Requesting a quote to install a S2 card reader with a keypad to provide additional monitoring and access control at Fire Station 7.	Agree
Timeframe:	December 2019	
Recommendation #6:	We recommend that the Atlanta Fire Rescue Department update procedures to include a back-up person to witness waste in the event the emergency medical services supervisor is unavailable.	
Response & Proposed Action:	The draft policy has been updated to require an EMS Supervisor or another paramedic to witness the waste of medications. Due to fire engines not having the capability to transport patients to hospital emergency rooms and subsequently engaging with emergency room nurses and physicians, this provides a logistically advantageous solution for units to waste medications on site and remain in service.	Agree
Timeframe:	July 2019	
Recommendation #7:	We recommend that the Atlanta Fire Rescue Department review controlled substances logs monthly to identify and address any inventory count discrepancies.	
Response & Proposed Action:	The draft policy has been updated to reflect a requirement for a monthly review to identify and address medication inventory discrepancies.	Agree
Timeframe:	July 2019	
Recommendation #8:	We recommend that the Atlanta Fire Rescue Department require all fields be completed on the controlled substances log and medications used forms, and it document when no medications were administered at each station.	
Response & Proposed Action:	The Medications Used form has been updated to provide additional accountability by requiring the acting officer in charge to also sign the form to ensure that all fields are accurate, and the documentation is complete.	Agree
Timeframe:	May 2019	
Recommendation #9:	We recommend that the Atlanta Fire Rescue Department ensure that all medications used forms are collected and reconciled with the controlled substances logs to ensure accuracy of inventory.	
Response & Proposed Action:	The draft policy has been updated to reflect a requirement for a weekly count to ensure accuracy of the Medications Used forms and the controlled medications inventory count.	Agree
Timeframe:	May 2019	

Recommendation #10:	We recommend the Atlanta Fire Rescue Department consider the feasibility of consolidating procurement to help decrease the amount of excess inventory and encourage the potential benefits of economies of scale purchasing.	
Response & Proposed Action:	Consolidating the procurement of medicine and emergency medical supplies to decrease excess inventory and the accumulation of expired medications and supplies is not consistent with the current practice of the separation of general fund (field operations) and enterprise fund (airport operations) processes.	Disagree
Timeframe:	N/A	
Recommendation #11:	We recommend that the Atlanta Fire Rescue Department update procedures to include a routine disposal process for expired medical inventory and retrain all applicable staff.	
Response & Proposed Action:	The draft policy has been updated to reflect routine disposals quarterly.	Agree
Timeframe:	May 2019	
Recommendation #12:	We recommend that the Atlanta Fire Rescue Department enforce the verification of expiration date of drugs and medical supplies daily.	
Response & Proposed Action:	The verification of medication and medical supplies expiration dates will be enforced. Additional accountability to ensure compliance will be monitored by requiring the acting officer in charge to also sign the daily EMS supplies check off sheets, *Medications Used* forms and EEMS providers checking the expiration dates of supplies and medications prior to use or administration.	Agree
Timeframe:	May 2019	
Recommendation #13:	We recommend that the Atlanta Fire Rescue Department implement an electronic inventory management system. In the meantime, the department should: • conduct a 100% inventory count of all drugs and medical supplies at emergency medical services locations • enforce completion of all required documents, including the controlled substances logs, medication used forms, medication bag check-offs, and transfer of custody forms to track medical inventory • perform and document periodic inventory counts and immediately resolve any discrepancies • establish a retention policy for all inventory records • incorporate the revised inventory procedures into the department's policy	
Response & Proposed Action:	The Technical Services Division has identified an asset management system that will accommodate both airport and field operations. Field Operations is undergoing an inventory count and is expected to complete it no later than April 22, 2019. Airport Operations completed its inventory count April 15, 2019. COA Records Management has been contacted regarding an inventory records application for retention.	Agree
Timeframe:	**July 2019**	

Recommendation #14:	We recommend that the Atlanta Fire Rescue Department collaborate with Atlanta Information Management (AIM) to fully implement an electronic inventory management system into airport operations.	
Response & Proposed Action:	The Technical Services Division has identified an asset management system that will accommodate both airport and field operations.	Agree
Timeframe:	November 2019	
Recommendation #15:	We recommend that the Atlanta Fire Rescue Department determine if an electronic inventory management system is feasible for field locations.	
Response & Proposed Action:	The Technical Services Division has identified an asset management system that will accommodate both airport and field operations.	Agree
Timeframe:	November 2019	

AMANDA NOBLE
City Auditor
anoble@atlantaga.gov

STEPHANIE JACKSON
Deputy City Auditor
sjackson@atlantaga.gov

CITY OF ATLANTA

CITY AUDITOR'S OFFICE
68 MITCHELL STREET SW, SUITE 12100
ATLANTA, GEORGIA 30303-0312
http://www.atlaudit.org
(404) 330-6452
FAX: (404) 658-6077

AUDIT COMMITTEE
Marion Cameron, CPA, Chair
Daniel Ebersole
Danielle Hampton
Amanda Beck, PhD

May 15, 2019

Honorable Mayor and Members of the City Council:

We undertook this audit following our 2018 investigation of theft of fuel involving the Atlanta Fire Rescue Department, which identified weak inventory controls. Several fire stations operate advanced life support vehicles that carry medical supplies, including controlled substances. Because of the weaknesses in controls over fuel, we chose to audit current inventory controls over medical supplies. The purpose of this audit is to review controls over medical supplies to ensure inventory management procedures comply with applicable regulations and minimize risks of fraud, waste, and abuse. We did not conduct procedures to identify instances of theft; we focused on inventory control weaknesses.

The Audit Committee has reviewed this report and is releasing it in accordance with Article 2, Chapter 6 of the City Charter. We appreciate the courtesy and cooperation of city staff throughout the audit. The team for this project was Randi Qualls and Diana Lynn.

Amanda Noble
City Auditor

Marion Cameron
Chair, Audit Committee

Atlanta Fire Rescue Department
Inventory Management of Medical Supplies

Table of Contents

List of Exhibits

Introduction

We undertook this audit following our 2018 investigation of theft of fuel involving the Atlanta Fire Rescue Department, which identified weak inventory controls. Several fire stations operate advanced life support vehicles that carry medical supplies, including controlled substances. Because of the weaknesses in controls over fuel, we chose to audit current inventory controls over medical supplies. The purpose of this audit is to review controls over medical supplies to ensure inventory management procedures comply with applicable regulations and minimize risks of fraud, waste, and abuse. We did not conduct procedures to identify instances of theft; we focused on inventory control weaknesses.

Background

The Atlanta Fire Rescue Department provides fire protection and first responder emergency medical services to the City of Atlanta. The department's mission is to provide "prompt quality services to our stakeholders that promote safety and security, enhance sustainability, and enrich the quality of life through professional development and dedication to service." The department is internationally recognized and is one of only 19 departments in the country to be accredited by the Center for Public Safety Excellence for providing all-hazards emergency response services.

The Atlanta Fire Rescue Department reports that it responded to more than 100,000 calls in 2017, which equates to about 274 calls per day during the year. Although not every call requires medical attention, first responders should have adequate drug and medical supplies to treat patients when responding to calls. The Atlanta Fire Rescue Department's handling of drugs and medical supplies should meet basic inventory management best practices and legal requirements to minimize the risk of fraud, waste, and abuse.

Medical Services Are Provided at the Airport and Field Locations

The Atlanta Fire Rescue Department's Office of Emergency Medical Services provides basic and advanced life support services to the City of Atlanta and Hartsfield-Jackson Atlanta International Airport. Emergency medical incidents include personal injuries resulting from cardiac events, automobile accidents, sickness, and crimes. Emergency

medical staff render first aid, administer medications, and transport patients to the hospital.

The Atlanta Fire Rescue Department's Office of Emergency Medical services is divided into two groups—City Emergency Medical Services and Airport Emergency Medical Services, highlighted in Exhibit 1. City Emergency Medical Services (field locations) and Airport Emergency Medical Services (airport locations) have decentralized inventory management processes in place due to different operating budget funds—field locations operate from the general fund and airport locations operate from the airport revenue fund.

Exhibit 1: Atlanta Fire Rescue Department Organization

AFRD Medical Supplies Inventory
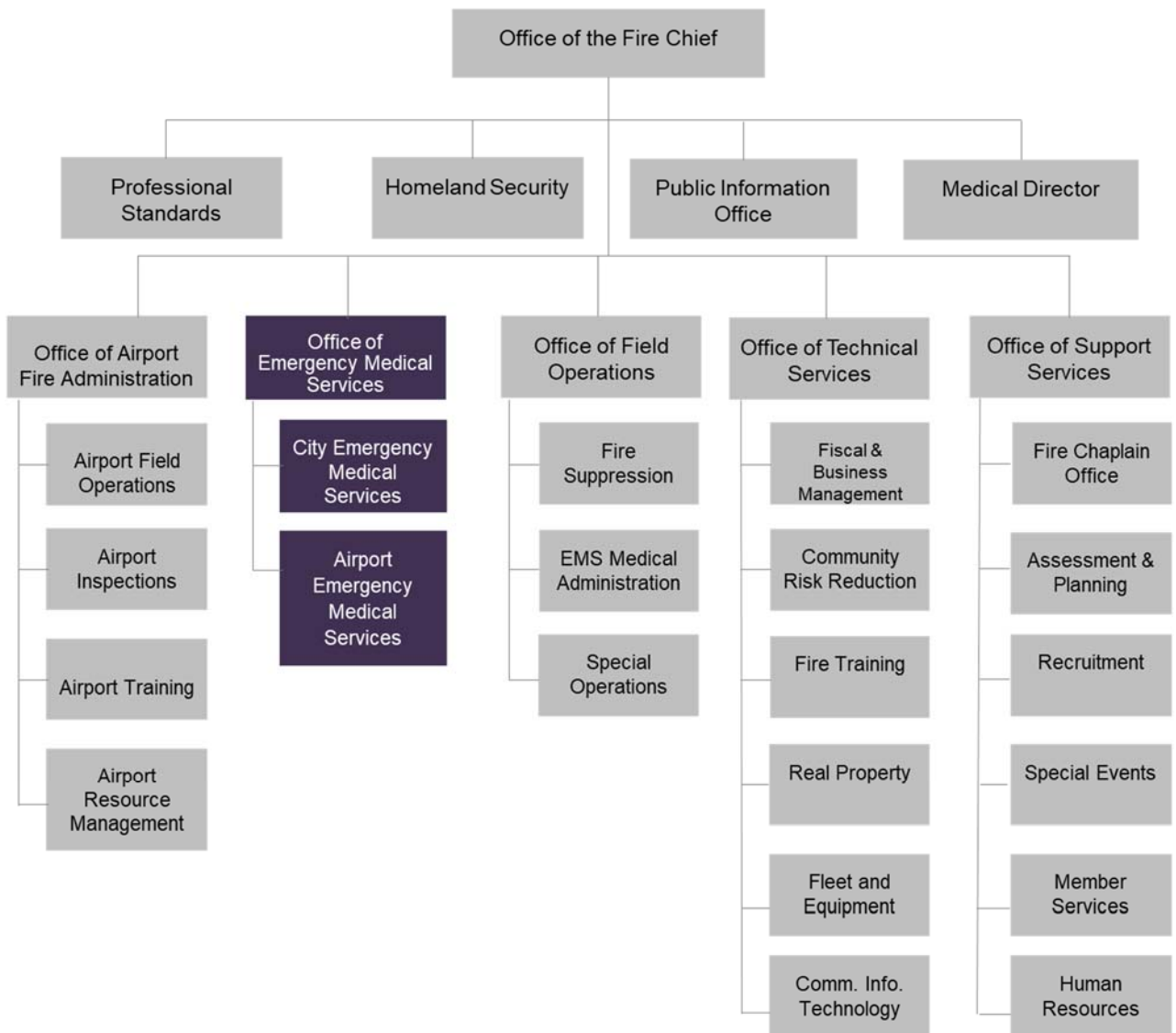
The Atlanta Fire Rescue Department operates 35 fire stations. There are 31 fire stations located throughout the city in field locations and 4 at the airport. Each station is classified based on the services it is licensed to provide; stations provide either basic or advanced life support services, as shown in Exhibit 2.

Exhibit 2: Atlanta's 35 Fire Stations Provide Either Basic or Advanced Medical Services

Location	Classification	Patient Transport	Medical Personnel on Staff	Services Provided	Station Count
City (Field)	Basic Life Support Station	No	• Emergency Medical Technician (EMT)	• First aid • Resuscitation	16
City (Field)	Advanced Life Support Station	No	• Emergency Medical Technician (EMT) • Paramedic	• First aid • Resuscitation • Administer medications, including controlled substances (Paramedics only)	15
Airport	Advanced Life Support Station	Yes	• Emergency Medical Technician (EMT) • Paramedic		4
				Total	35

Source: Developed by auditors based on information from the Atlanta Fire Rescue Department.

Basic life support stations maintain certified emergency medical technicians who are authorized to administer first aid and resuscitation services; these sites have limited medical supplies on hand. Advanced life support stations have emergency medical technicians and paramedics. Paramedics are trained and licensed to administer medications, including controlled substances.

In addition to providing advanced life support services, airport locations are licensed to transport patients directly to the hospital. Emergency medical staff at field locations respond to calls, but transfer care to Grady Hospital emergency medical services for patient transport.

Atlanta Fire Rescue Department Administers Schedule II and IV Drugs

As an emergency medical service provider that handles controlled substances, the Atlanta Fire Rescue Department must comply with applicable state and federal laws. Controlled substances are regulated by the federal Controlled Substances Act of 1970, which is primarily enforced by the Drug Enforcement Administration (DEA). The Act

classifies controlled substances into five schedules based on whether they have a currently accepted medical treatment use in the United States and their relative abuse potential and likelihood of causing dependence when abused, as shown in Exhibit 3. The schedules are published annually.

The Atlanta Fire Rescue Department administers four controlled substances: two Schedule II substances, fentanyl and morphine—opioids used to treat pain that have a high potential for abuse and severe dependence; and two Schedule IV substances, midazolam (Versed®) and diazepam (Valium®)—benzodiazepines used for sedation and the treatment of anxiety and seizures. According to the U.S. Drug Enforcement Administration, Schedule IV drugs have a lower potential for abuse compared to the Schedule II drugs.

Exhibit 3: Drugs Are Classified Based on Safety and Dependence Risk

Schedule	Substance Description
Schedule I	• No currently accepted medical use in the United States • High potential for abuse which may lead to severe psychological or physical dependence
Schedule II	• Accepted for medical use in the United States • High potential for abuse which may lead to severe psychological or physical dependence
Schedule III	• Accepted for medical use in the United States • Lower potential for abuse than substances in Schedule I or II that may lead to moderate or low physical dependence or high psychological dependence
Schedule IV	• Accepted for medical use in the United States • Lower potential for abuse than substances in Schedule III
Schedule V	• Accepted for medical use in the United States • Lower potential for abuse than substances listed in Schedule IV and consist primarily of preparations containing limited quantities of certain narcotics

Note: Atlanta Fire Rescue Department only purchases controlled substances in Schedule II and IV highlighted in the exhibit.

Source: Controlled Substances Act of 1970 and the U.S. Department of Justice Drug Enforcement Administration Diversion Control Division - List of Controlled Substances.

Department Spends Less Than 1% of Annual Budget on Drugs and Medical Supplies

From July 2017 through October 2018, the Atlanta Fire Rescue Department purchased $420,517 in drugs and medical supplies. The department also purchased controlled substances totaling another $626 during the same time period, which included Versed®, fentanyl, and morphine. Controlled substances and medical supplies purchases represent less than one percent of the department's expenditures from the 2018 fiscal year budget. As shown in Exhibit 4, the average cost per vial is less than two dollars.

Exhibit 4: Average Cost Per Vial of Controlled Substances is Less Than $2

Controlled Substances and Dosage	Average Cost Per Vial	Total
Morphine 10mg	$ 1.80	$ 225.00
Fentanyl 0.05mg/ml 2ml	$ 1.60	$ 200.34
Midazolam (Versed®) 5mg	$ 1.03	$ 123.96
Midazolam (Versed®) 10mg	$ 1.53	$ 76.65
Total		$ 625.95

Note: Could not determine diazepam (Valium®) costs because there were no purchases of this substance during our sample period.
Source: Auditor's analysis based on vendor invoices received from Accounts Payable.

Federal and State Requirements Echo Inventory Management Best Practices

Federal and state laws regulating controlled substances are consistent with basic inventory management best practices. The laws require agencies to track substances from purchase through disposal, store drugs securely, perform inventory counts, track amounts administered and disposed of, and maintain accurate and complete records of substances. This is often referred to as "cradle to grave" management (see Exhibit 5).

Exhibit 5: Cradle to Grave Inventory Management
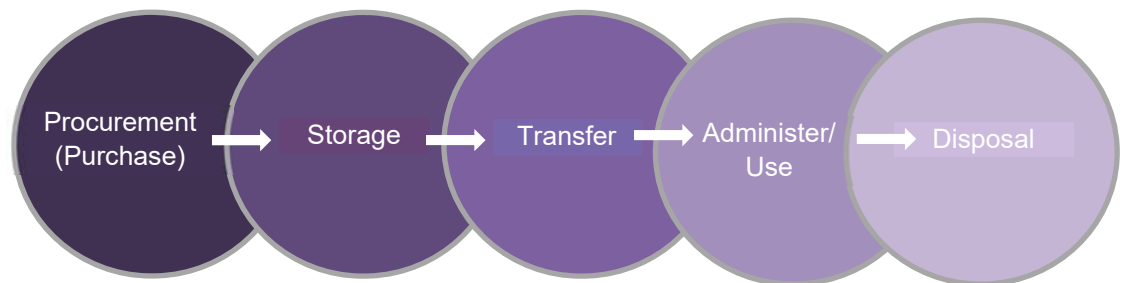
Source: Auditor's depiction of basic inventory management process.

Although the term is most commonly used to assess the environmental impacts of manufacturing certain products, it has also been used to refer to product lifecycles in general inventory management and other fields. For our purposes, the "cradle" represents drug purchase and the "grave" occurs at drug disposal. The General Accountability Office (GAO) developed a best practices framework and guide to improve inventory accountability and achieve accurate and consistent inventory records. The guide states that managing the acquisition, production, storage, and distribution of inventory is critical to control costs and obtain operational efficiency and effectiveness.

Title 21 of the Code of Federal Regulations (Chapter II), carried out by the Drug Enforcement Administration, provides requirements for administration of controlled substances. Section 1301.71(a) requires practitioners to provide effective controls and procedures to guard against the theft and diversion of controlled substances. This includes storing stocks of Schedule II through V substances in a "securely locked, substantially constructed cabinet." Practitioners must also maintain inventories and records of controlled substances dispensed to patients and keep complete inventory counts. Law requires agencies to transfer expired and damaged controlled substances to authorized facilities for disposal.

Federal controlled substances laws are designed to work with related state laws, which may be more stringent than the federal requirements. Georgia state law O.C.G.A. § 16-13-39 also requires emergency service providers who distribute or dispense controlled substances to keep complete and accurate records of quantities of drugs that are on hand, received, dispensed, or discarded. Also, Rules and Regulations of the State of Georgia Rule 511-9-2-.10 requires providers to have a written policy that addresses at a minimum the following related to pharmaceuticals: procurement, par levels, receiving, storage, distribution, accountability, inventory check frequency, waste/expiration, and handling of inventory discrepancies.

Audit Objectives

This report addresses the following objective:

- Are controls in place to ensure the Atlanta Fire Rescue Department's Emergency Medical Services inventory management procedures over medical supplies comply with applicable regulations and minimize risks of fraud, waste, and abuse?

Scope and Methodology

We conducted this audit in accordance with generally accepted government auditing standards. We primarily focused on medical inventory at Atlanta Fire Rescue Department stations from July 2017 through December 2018.

Our audit methods included:

- reviewing federal, state, and city laws to understand requirements for handling controlled substances

- reviewing and comparing the Atlanta Fire Rescue Department's procedures with state rules to determine whether all requirements were met

- researching best practices for medical inventory management and safeguarding controlled substances

- interviewing subject matter experts from the department and the external medical director to determine the process of managing medical inventory

- interviewing state agencies to understand state requirements and inspection processes for medical inventory management

- interviewing Hall County officials to understand how an electronic inventory management system could be integrated into the city

- conducting field ride-alongs with fire department staff at ten randomly sampled fire stations to observe employee practices and process controls

- conducting field ride-alongs with fire department emergency services staff to understand how inventory is managed

- analyzing state-required vehicle inspections to determine how often the city failed an inspection due to inventory issues, such as expired or missing inventory

- analyzing invoices for medical supplies and controlled substances from July 1, 2017 through October 31, 2018 to determine how much the department spent on inventory

- analyzing medication use forms from July 1, 2017 through October 31, 2018 to determine completeness and accuracy as required by procedures

- conducting a physical count of controlled substances and a judgmental sample of medical supplies to determine how much inventory was readily available or expired at storage and sampled fire stations

- conducting a physical count of midazolam (Versed®) to determine whether inventory could be tracked from procurement to disposal

- comparing field's controlled substances log to medication use forms in order to determine if inventory could be reconciled when administered in the field

Generally accepted government auditing standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Findings and Analysis

Weak Inventory Management Controls Leave the Department Vulnerable to Waste and Loss

Due to poor recordkeeping and tracking, the Atlanta Fire Rescue Department is unable to accurately and completely track medical supplies and drug inventory, including controlled substances. Fewer controls are in place to track inventory in field locations than at airport locations. Field locations were unable to account for three to five vials of Versed and had an overage of one vial of fentanyl between January 2018 and October 2018 because entries on the controlled substances log were either missing or incomplete. Emergency medical services personnel at airport locations did not consistently record transaction dates on the controlled substances logs.

Federal and state laws regulating controlled substances require agencies to track substances from purchase through disposal, store drugs securely, perform inventory counts, track amounts administered and disposed of, and maintain accurate and complete records. Without adequate controls, drugs and medical supplies, particularly controlled substances, are susceptible to theft or diversion. Inventory best practices recommend tracking items from purchase to disposal.

We also found that all emergency medical services locations failed to separate and dispose of expired medications—a little over 80% of controlled substances at the airport was expired. Based on a random sample of state-mandated inspections conducted between 2013 and 2018, the most common reason for failure was expired medical supplies. The department has neither specified in its procedures how to dispose of expired medications nor has it defined the frequency of disposal. Also, physical security should be strengthened at both field and airport locations.

We recommend that the Atlanta Fire and Rescue Department update its policies and procedures to include specific language that describes procurement and disposal procedures. We also recommend that airport locations complete implementation of the Operative IQ inventory system to automate inventory management and consider the feasibility of procuring the system for field locations as well. In the meantime, the department should:

- conduct a 100% inventory count of all drugs and medical supplies at emergency medical services locations

- enforce completion of all required documents, including the controlled substances logs, medication used forms, medication bag check-offs, and transfer of custody forms to track medical inventory
- perform and document periodic inventory counts and immediately resolve any discrepancies
- establish a retention policy for all inventory records
- incorporate the revised inventory procedures into the department's policy

Emergency Medical Services Policy Omits Key State Requirements

The State of Georgia requires that licensed emergency medical agencies adhere to rules and regulations designed to govern the proper handling of medical supplies from procurement to disposal. While the Atlanta Fire Rescue Department's policies and procedures address most of the minimum state requirements, the procedures are missing key requirements including specific provisions for drug procurement and the disposal of obsolete or expired medical supplies. Without detailed procurement and disposal procedures in place, the department may lack processes to adequately control costs and prevent waste. Drugs and medical supplies, particularly controlled substances, may also be susceptible to theft or diversion.

The Atlanta Fire Rescue Department's procedures do not address drug procurement and disposal, as required by the state. The department's emergency medical services policy includes all provisions required by state rules except purchasing procedures and procedures for disposing of expired drugs and medical supplies. According to the Rules and Regulations of the State of Georgia Rule 511-9-2-.10, all licensed emergency medical services must have a written policy that includes at a minimum the following:

- procurement
- par levels (minimum required stock quantities)
- receiving
- storage
- distribution
- accountability
- inventory check frequency
- waste/expiration (disposal)
- handling of inventory discrepancies

The Atlanta Fire Rescue Department's procedures include a single statement that the department will "ensure that all procedures of procurement, storing, administration, and waste of controlled

substances are strictly followed," but lack specific procedures covering the purchase and disposal of drug and medical supplies. The policy was approved by department leadership in 2015 and is intended to govern emergency medical services operations both at airport and field locations.

Logistics coordinators in the field and emergency medical supervisors at the airport are responsible for ordering, storing, distributing, and disposing of drugs and medical supplies. Without specific procurement procedures in place, the department may lack processes to adequately control costs and prevent waste. Practices at different locations may also be inconsistent. State laws require expired and damaged controlled substances to be transferred to authorized facilities for disposal. Specific disposal procedures are needed to help protect drugs from theft and diversion.

We recommend that the Atlanta Fire Rescue Department update its policies and procedures to include specific language that describes procurement and disposal procedures. Procurement procedures should include specific persons responsible for each stage of the handling process, including requisition to purchasing and the purchasing frequency, for example, based on minimum par levels. Disposal procedures should state how frequently expired drugs will be sent to disposal facilities and the process for transferring expired drugs to the pharmaceutical disposal vendor.

Field and Airport Operations Lack Consistent Practices and Controls, Which Increases Risk of Loss

We found inconsistencies in operational practices between field and airport locations for emergency medical services. While field and airport locations share the same departmental policy, the policy does not specifically address procurement and disposal for either group, and it also fails to include any practices currently in operation at airport locations. In addition to inconsistent practices, controls over inventory vary between field and airport locations. Weaker physical security in field locations poses risks of potential diversion or loss of drugs and medical supplies.

Emergency medical services operations vary between field and airport locations. Field locations purchase, store, and dispose of drugs and medical supplies separately from the airport. Logistics coordinators facilitate purchasing, receiving, and disposing of drugs and medical supplies in the field; emergency medical services supervisors are responsible for these activities at the airport. Field and airport

locations operate from two different budgetary funds, which contributes to differences in their purchasing and disposal activities.

Emergency medical services personnel administer drugs and medical supplies to patients from secured medication bags stored on fire trucks and ambulances. Supervisors are responsible for replenishing medication bags at field locations, whereas airport supervisors do not handle medication bags—supervisors instead deliver specific drugs and medical supplies to airport stations. Recordkeeping varies as well. An overview of operational differences between field and airport locations is shown in Exhibit 6.

Exhibit 6: Operational Differences Between Field Locations and Airport Locations

Operation	Field Locations	Airport Locations
Purchases drugs and medical supplies	Logistics Coordinator	Airport Emergency Medical Services Supervisor
Receives inventory (Controlled Substances)	Logistics Coordinator (Medical Director)	Airport Emergency Medical Services Supervisor (Medical Director)
Distributes inventory into storage	Logistics Coordinator	Airport Emergency Medical Services Supervisor
Transfers inventory out of storage to stations	Field Emergency Medical Services Supervisor	Airport Emergency Medical Services Supervisor
Records drugs administered/wasted	Medications Used/Controlled Meds Wasted form	Controlled Medication Accountability form
Disposes of expired drugs and medical supplies	Logistics Coordinator	Airport Emergency Medical Services Supervisor

Source: Developed by auditors based upon interviews with Atlanta Fire Rescue Department.

Operational differences are undocumented in procedures. The emergency medical services policy states that it "will provide procedural clarity for the procurement, control, handling, and accountability" of drugs and medical supplies, yet the airport's practices are not included. Airport personnel told us that they did not have a separate policy for their operations. Best practices suggest that inventory managers establish written policies that provide clear and comprehensive procedures.

Physical security controls and medication bag replenishment practices at the airport reduce likelihood of loss or theft; those at field locations pose greater risk. The airport's controlled substances procedures for

medication bag storage are different from those in field locations. Both airport and field locations use seals to secure their controlled substances; however, airport locations store their controlled substances in a sealed, clear case (see Exhibit 7). This is a less intrusive process than breaking the seal on the bag to administer medication, and it allows personnel to perform an inventory count at a glance. As shown in Exhibit 7, field locations use a red, opaque bag to secure controlled substances, which makes it impossible to perform a quick inventory count without breaking the seal.

Exhibit 7: Airport Uses Clear Cases to Secure Controlled Substances

Controlled Substances Case   Field Controlled Substances Case
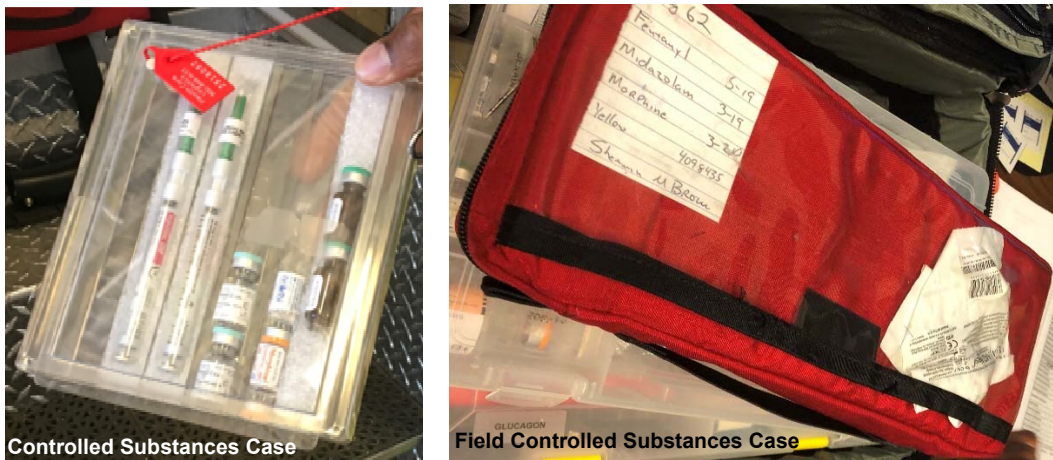
Source: Auditor's picture taken during ride-along with Emergency Medical Services Supervisors.

Field locations decommission medication bags when paramedics use any of the controlled substances or open the bag four times to administer medications. Decommissioned bags are placed out-of-service until an emergency medical services supervisor picks them up and exchanges them for replenished medication bags. Airport locations do not decommission medication bags—supervisors replenish drugs as they are used.

We identified some security concerns in field locations and have discussed our observations with the Atlanta Fire Rescue Department. Departmental procedures require personnel to store medication bags in a secure location on emergency vehicles.

We recommend that field locations use a clear case to store controlled substances. Emergency medical services supervisors in field locations should also replenish specified drugs and medical supplies only as requested by each station and discontinue the bag decommissioning process unless the bag has sustained physical damage that prevents secure use. The department should also ensure that emergency vehicles are equipped with locked compartments.

Dual controls for inventory transfers and the waste of controlled substances reduce risk of diversion. We found that emergency medical services supervisors in field locations do not have a second person observe controlled substances transactions in and out of storage, as is the practice at the airport. Inventory best practices suggest applying dual control activities so that no single person can negatively affect the accuracy and integrity of the inventory count. Whenever airport personnel need to access the controlled substances storage area, they are responsible for soliciting another authorized personnel member to witness transactions in and out of the storage area. Authorized personnel include the section fire chief, emergency medical services supervisor, or a lieutenant.

Field locations' controlled substances waste procedures differ from airport locations. During interviews with field personnel, they stated that they do not always contact an emergency medical services supervisor to witness waste, as required by departmental procedures. Medications "wasted," which is medication remaining after a dose is administered to a patient, must be disposed of and documented on the medication used forms.

The department's policy specifically states that if there is excess medication in the controlled substances vial after the appropriate dosage is administered, the paramedic must contact the emergency medical services supervisor on-duty to come to the scene and witness the waste or to collect the substance for random analysis. Because airport paramedics are authorized to administer controlled substances to patients and transport patients to the hospital, the receiving physician at the hospital witnesses the waste and signs the controlled medication accountability form.

We recommend that the Atlanta Fire Rescue Department implement dual controls in procedures to limit the risk of diversion. The department should also add a contingency plan to its departmental policy to specify who will witness waste if the emergency medical services supervisor is unavailable.

Combined Control Weaknesses Contribute to Inaccurate Recordkeeping

Incomplete recording of inventory transactions in the field makes it difficult to track the amount of controlled substances on hand, administered, and disposed of at any given time. Inventory records at airport locations were incomplete, and the majority of controlled substances inventory was expired. Lack of documentation to record

drugs purchased, used, and disposed of, as well as unsecured storage, leaves controlled substances and other drugs and medical supplies vulnerable to loss, theft, and abuse.

In October 2018, we attempted to perform an inventory count of Versed and fentanyl purchased in January 2018 and track these controlled substances from purchase to disposal. Missing or incomplete entries on controlled substances logs and medications used forms made it impossible to account for controlled substances purchased.

Both Versed and fentanyl are controlled substances that can be harmful to the public if diverted. Lack of documentation to record drugs purchased, used, and disposed of, leaves controlled substances and other drugs and medical supplies vulnerable to loss, theft, and abuse.

Controlled substances documentation was inaccurate and incomplete at both field and airport locations, making inventory reconciliation impossible. Using Versed and fentanyl as samples, we reviewed the controlled substances log entries to trace 70 vials of Versed and 75 vials of fentanyl that the department purchased in January 2018 by comparing the number used to those remaining in inventory in October 2018. Our calculations of the ending inventory count differed from the field's log entries. Based on used and exchanged quantities, we calculated that there should have been between 3 and 5 vials of Versed remaining in inventory in October 2018; the log entry showed zero remaining and none were physically on hand. Fentanyl's ending inventory count showed an overage of one vial in the log. Inventory overages are as risky as shortages because both indicate inaccurate recording of the movement of controlled substances that should be investigated and the inventory reconciled. The airport's controlled substances log did not consistently include entry dates, so we were unable to perform a similar inventory count (see Exhibit 8).

Versed is a Schedule IV controlled substance, the brand name of the drug midazolam, which is administered to patients before and during surgeries and other medical procedures to induce drowsiness and relieve anxiety. Side effects of midazolam can include paranoia and impaired memory, judgment, and coordination. Fentanyl is a Schedule II drug—a synthetic opioid that is about one hundred times more potent than morphine. It is used medically for pain relief, and according to the Centers for Disease Control and Prevention, it is sold through illegal drug markets for its heroin-like effects. Lack of documentation to record drugs purchased, used, and disposed of, leaves controlled substances and other drugs and medical supplies vulnerable to loss, theft, and abuse.

Both field and airport locations inaccurately recorded entries in their controlled substances logs. Logs contain records of controlled substances vials in the secured storage. As personnel enter the secured storage, they are responsible for recording a starting inventory count. Before they close the secured storage, personnel are also responsible for recording the ending inventory count. Both counts include all controlled substances in inventory, including the expired vials. We attempted to use these logs as the starting point for our inventory count. Emergency services supervisors did not fully document the movement of vials from purchase to disposal at field locations. Airport personnel did not always include dates of entries in the controlled substances log (see Exhibit 8). These inaccurate and inconsistent records made it difficult to track controlled substances from purchase to disposal. Fire personnel stated that they do not know the quantities of drugs and medical supplies on hand at any given point in time.

Exhibit 8: Airport Controlled Substances Log Without Date

Note: Name redacted
Source: Controlled Substance Logs provided by the airport.

Federal and state laws regulating controlled substances are consistent with basic inventory management best practices. State law requires emergency service providers that distribute or dispense controlled substances to keep complete and accurate records of quantities of drugs that are on hand, received, dispensed, or disposed of, which is consistent with the federal Controlled Substances Act.

We recommend that the Atlanta Fire Rescue Department supervisors review the controlled substances log entries monthly to identify and address any discrepancies within the count. The department should also enforce the requirement that all fields be completed on the controlled substances logs for field and airport locations.

We found that 21% of medications used forms used to track controlled substances in the field were incomplete. We found that of the 1,217 medications used forms we collected from all field locations between July 2017 through October 2018, 21% were incomplete (see Exhibit 9). Medications used forms are completed by paramedics and used to

document any medications used and/or wasted during an incident (see Exhibit 10).

Exhibit 9: 21% of Medications Used Forms Were Incomplete

21%
253

79%
964

Total -1,217

■ Complete ■ Incomplete
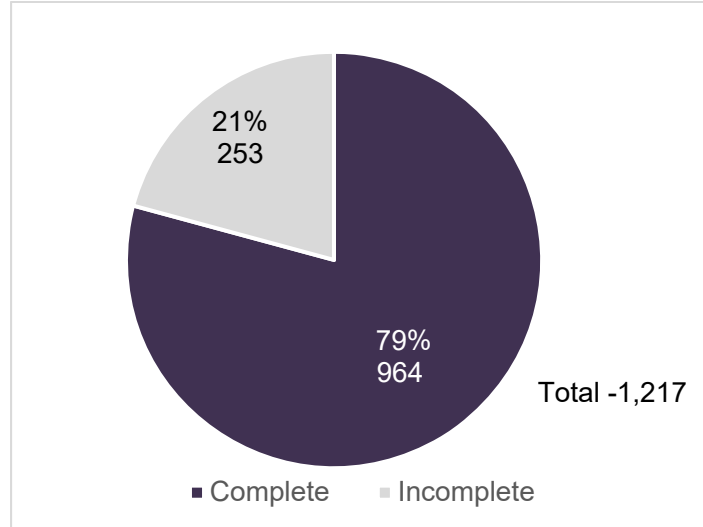
Source: Field locations' medications used forms collected by the Atlanta Fire Rescue Department for medications administered from July 1, 2017 through October 31, 2018.

Exhibit 10: Medications Used Forms

Medications Used

Bag # _____

Incident # _____ Date _____

Unit # _____ Medic _____

Medication _____ Dose _____

Medication _____ Dose_____

Medication _____ Dose_____

New Yellow Seal # _____

Controlled Meds Wasted

Medication _____ Wasted Amt._____

Medication _____ Wasted Amt _____

Blue Seal # _____

Controlled Yellow Seal # _____

EMS Supervisor _____

Source: Atlanta Fire Rescue Department Policies and Procedures

We found that of the 1,217 medications used forms collected, 61 (5%) of the forms could not be analyzed because of incomplete or inaccurate

dates—we could not determine whether they fit within our scope. Of the remaining 1,156 that we were able to analyze, we found that field locations completely documented 964, or 79% of medications used forms. Forms with incomplete or missing fields accounted for 16% of the 1,156 forms.

The department's procedures require that employees properly fill out the medications used forms. The forms are needed to track controlled substances and other medical inventory.

We recommend that the Atlanta Fire Rescue Department enforce the requirement that all applicable fields on the medications used forms be completed.

No medication use was recorded on 18% of dates within our sample. Between July 2017 and October 2018, 86 (18%) of the 487 dates had no medications used forms from field locations. We found that the field had 11 occurrences in which medications used forms were not collected from any fire station for two or more days, including 11 consecutive days in April 2018. The department stated that it is not uncommon for field locations to have a few days without administering medications because they do not transport patients, but personnel agreed that several consecutive days without administering medications seemed implausible. We could not accurately determine how much medical inventory was administered or wasted due to the lack of recordkeeping.

According to the department's procedures, the documentation of medications used must accompany the medication bag and emergency medical services supervisors are required to remove and turn in the completed medication used forms for filing; procedures do not address the process for verifying the completeness of forms or inventory reconciliation.

We recommend that the Atlanta Fire Rescue Department ensure that all medications used forms are collected and stations confirm and document days without administering medications. We also recommend that the department reconcile medications used forms with the controlled substances logs to ensure the accuracy of inventory.

The Atlanta Fire Rescue Department failed 62% of a random sample of 34 state-mandated inspections, in part due to expired medications. The department failed 21 of the 34 sampled vehicle inspections conducted by the Georgia Department of Public Health between November 2013 through August 2018. During our observations, we noticed expired drugs and medical supplies stored alongside usable inventory, which poses risks to the public.

We found that 12 of the 21 failed inspections included expired inventory on emergency vehicles; the inspections noted expired airway kits, priority one equipment, obstetrical kits, priority three equipment, syringes, and catheters. The state provided us with a random sample of 34 inspections conducted in 2014, 2015, 2016, and 2018; we requested all inspections conducted between 2013 and 2018.

The state conducts annual inspections of emergency vehicles to ensure emergency service providers' emergency equipment is in compliance with state rules and regulations. Emergency providers fail the state-mandated inspection when equipment categorized as a priority one is found to be out of compliance. Priority one is defined as critical essential equipment that must be on the emergency vehicle at all times. To regain compliance, the provider must correct any violations as soon as practicable. During our observation, the Atlanta Fire Rescue Department regained compliance immediately following the inspection. Since field locations do not transport patients, the department has the discretion to continue operating out-of-compliance; however, the Department of Public Health inspector suggested that the city may be liable if medical inventory used during an incident was deemed out-of-compliance.

Expired medications are stored alongside useable medications, which creates a potential risk to public safety. Based on sampled reports, most of the department's failed state-mandated inspections between 2013 and 2018 were due to expired medical inventory. According to the department's procedures, paramedics are responsible for confirming proper medication names and expiration dates prior to the administering medication.

We also found that 1,192 (13%) of the 9,517 sampled medical inventory items in field locations' storage were expired, including 89% of the glucose and 27% of the obstetric kits (see Exhibit 11). Our judgmental sample included frequently used items according to the medication used forms and commonly expired items according to state inspection reports.

Exhibit 11: 13% of Stored Inventory Is Expired in Field Locations Storage

Medical Supply	Available for Field Use	Expired	Total	Percent Expired
Glucose	99	828	927	89%
Obstetric Kits	150	56	206	27%
Saline	1,600	258	1,858	14%
Airway Sets	716	16	732	2%
Syringes	1,543	34	1,577	2%
AED Pads	74	-	74	0%
Catheters	4,143	-	4,143	0%
Total	**8,325**	**1,192**	**9,517**	**13%**

Source: Analysis of the judgmental sample of medical inventory in storage as of December 2018.

We also analyzed medical inventory at nine randomly sampled advanced life support fire stations in field locations. At the sampled stations, 413 (13%) of the 2,732 items we inventoried were also expired. Obstetric kits and syringes had the highest percentages of expired items (see Exhibit 12). The cost of the expired inventory ranged between $533-$973, depending on which of the two vendors provided the supplies. While the costs of expired inventory may not be high, infrequent disposal activities increases the risk of administering expired drugs.

Exhibit 12: Expired Inventory in Field Locations Could Pose Risk to Patients

Medical Supply	Usable	Expired	Percent Expired
Obstetric Kit	25	26	51%
Syringes	319	112	35%
Cardiac Pads	99	43	30%
Saline Flush	226	46	17%
Airway Sets	329	34	10%
Catheters	1,452	149	10%
1000cc Bag NS	73	3	4%
Nitroglycerin	16	0	0%
Narcan	30	0	0%
Glucose	32	0	0%
Atropine	15	0	0%
Albuterol	116	0	0%
Total	**2,732**	**413**	**13%**

Source: Analysis of the judgmental sample of medical inventory at sampled fire stations as of December 2018.

We observed that emergency medical services personnel have not made expiration date checks a priority in their operations, which could lead to the administration of expired medication to patients. The emergency medical services supervisors keep a record of controlled substances expiration dates and rotate the inventory out of field locations monthly; the expired controlled substances remain in storage for months before they are transferred to disposal facilities. A supervisor could easily mistake an expired vial for an unused vial and mix it with the unused inventory.

Although required by state law, the department currently has no procedures for disposing of expired controlled substances. Field locations completed one disposal of controlled substances that complied with federal Drug Enforcement Agency requirements in October 2018.

Because field and airport locations operate from different budgetary funds, they purchase drugs and medical supplies separately. This could contribute to the excess of expired inventory. We recommend that the department consider the feasibility of consolidating procurement to help decrease the amount of excess inventory and encourage the potential benefits of economies of scale purchasing.

We observed expired controlled substances that were stored in the same locked container as usable inventory at field locations (see Exhibit 13). According to staff, the emergency medical services supervisor places an "X" across the top of the vial or "EXP" on the box of expired medications to indicate the drug is out of service. If it is a controlled substance, the supervisor places it back within the safe with the non-expired medications. Storing expired inventory with usable controlled substances could pose the risk of supervisors replenishing a bag with expired medications and paramedics administering them in the field.

Exhibit 13: Expired Controlled Substances Stored with Non-Expired Inventory

Source: Images captured by audit team during field locations ride-along in September 2018.

The airport also stored its usable and expired controlled substances in the same storage location and did not dispose of its controlled substances in a timely manner. Of the 333 controlled substances on hand at airport, we found that 82% were expired.

We recommend that the Atlanta Fire Rescue Department update procedures to include a routine disposal process for expired medical inventory and train all applicable staff. We also recommend that the department enforce the verification of expiration dates prior to administering any medications to a patient.

Formal Inventory Management System Would Mitigate Risks

The Atlanta Fire Rescue Department would benefit from implementing an automated inventory management system that would allow it to record and track inventory in real-time. The airport has taken steps to move its manually-intensive inventory management process to an electronic system by purchasing the Operative IQ software. Operative IQ allows agencies to electronically record, track, and reorder inventory. The airport purchased Operative IQ about three years ago, but it has not fully implemented the system because they have not purchased the electronic devices needed to record inventory.

We contacted Hall County, located 60 miles north of the city, which has integrated Operative IQ in its emergency medical services operation. We received information about the system from Hall County personnel (see Exhibit 14).

Exhibit 14: Automated Inventory System is Being Implemented at the Airport

Description	PAR	Last Qty	UOM	On Hand	Expire Date / Kit ID
CPAP Quick Connect	3	3	EA	+ 3 −	
CPAP-adult medium	1	1	EA	+ 1 −	08/31/2019
CPAP-adult medium	1	1	EA	+ 1 −	08/31/2019
CPAP-adult medium	1	1	EA	+ 1 −	08/31/2019
CPAP-adult medium	1	1	EA	+ 1 −	08/31/2019
CPAP-adult medium	1	1	EA	+ 1 −	08/31/2019
CPAP-adult large	2	2	EA	+ 2 −	
CPAP-adult small	2	2	EA	+ 2 −	
BVM-adult	2	2	EA	+ 2 −	
CPR Zoll Adult Defib Pads	1	1	EA	+ 1 −	07/27/2015
CPR Zoll Adult Defib Pads	1	1	EA	+ 1 −	12/21/2015
CPR Zoll Adult Defib Pads	1	1	EA	+ 1 −	01/17/2017

Source: Hall County Emergency Medical Services Operative IQ.

The inventory and asset management module allows the agency to track each inventory item, and it identifies par levels, real-time quantities, unit of measures, and expiration dates. Operative IQ has notification capabilities to alert agencies when supplies are low or items are near expiration. Once an item reaches or exceeds the minimum par level, it is automatically added to a list of supplies needed.

We recommend that the airport purchase the electronic devices for Operative IQ and train the appropriate personnel to use the system to manage inventory. The department should also consider the feasibility of implementing the inventory and asset management module in field locations.

Until Operative IQ is fully implemented, we recommend that the Atlanta Fire Rescue Department:
- conduct a 100% inventory count of all drugs and medical supplies at emergency medical services locations
- enforce completion of all required documents, including the controlled substances logs, medication used forms, medication bag check-offs, and transfer of custody forms to track medical inventory
- perform and document periodic inventory counts and immediately resolve any discrepancies
- establish a retention policy for all inventory records
- incorporate the revised inventory procedures into the department's policy

Recommendations

To strengthen safeguards against drug and medical supply diversion and to improve inventory management, the Atlanta Fire Rescue Department should:

1. update its policies and procedures to include specific language that describes procurement and disposal procedures

2. provide field locations with assigned medication bags and store controlled substances in a clear case in a separate compartment from other drugs and medical supplies

3. discontinue bag decommissioning in field locations

4. ensure all emergency vehicles are equipped with locked compartments to store medication bags

5. require dual controls when accessing the controlled substances storage

6. update procedures to include a back-up person to witness waste if the emergency medical services supervisor is unavailable.

7. review controlled substances logs monthly to identify and address any inventory count discrepancies

8. require all fields be completed on the controlled substances log and medications used forms, and document when no medications were administered at each station

9. reconcile controlled substances logs and medications used forms to ensure the accuracy of inventory

10. consolidate procurement to help decrease the amount of excess inventory

11. update procedures to include a routine disposal process for expired medical inventory and retrain all applicable staff

12. verify emergency services personnel are checking expiration dates of drugs and medical supplies daily

13. implement an electronic inventory management system. In the meantime, the Atlanta Fire Rescue Department should:
    a) conduct a 100% inventory count of all drugs and medical supplies at emergency medical services locations

    b) enforce completion of all required documents, including the controlled substances logs, medication used forms,

medication bag check-offs, and transfer of custody forms to track medical inventory

c) perform and document periodic inventory counts and immediately resolve any discrepancies

d) establish a retention policy for all inventory records.

e) incorporate the revised inventory procedures into the department's policy

To mitigate inventory control risks, the Atlanta Fire Rescue Department should:

14. collaborate with Atlanta Information Management (AIM) to fully implement an electronic inventory management system into airport operations

15. determine if an electronic inventory management system is feasible for field locations

Appendix

Appendix A: Management Review and Response to Audit Recommendations

Report # 19.01	Performance Audit: Atlanta Fire Rescue Department Inventory Management of Medical Supplies	Date: May 2019

Recommendation 1:

We recommend the that Atlanta Fire Rescue Department update its policies and procedures to include specific language that describes procurement and disposal procedures.

Proposed Action: The standard operational procedures for pharmaceutical bag replacement and EMS supplies ordering and inventory are in draft.	**Response:** Agree
Person Responsible: Deputy Chief Jolyon Bundrige; EMS Division	**Implementation Date:** July 1, 2019

Recommendation 2:

We recommend that the Atlanta Fire Rescue Department provide field locations with assigned medication bags and store controlled substances in a clear case in a separate compartment from other drugs and medical supplies.

Proposed Action: The EMS division has identified a clear container to store controlled substances that will fit into our existing medical bags. Once ordered the containers will take several weeks to arrive, stock and distribute throughout the department. The department asks that the recommendation to provide field locations with assigned medication bags be modified as it is like recommendation 3 (to discontinue decommissioning bags in the field). The department agrees with the recommendation to store controlled substances in a clear case.	**Response:** Partially Agree
Person Responsible: Deputy Chief Jolyon Bundrige; EMS Division	**Implementation Date:** June 1, 2019

Recommendation 3:

We recommend that the Atlanta Fire Rescue Department discontinue bag decommissioning in field locations.

Proposed Action: Due to the logistical resources needed to support field operations, in addition to security concerns regarding the transport of controlled medications to supply thirty-one fire station locations across the City, the department must continue to decommission bags in field locations.	**Response:** Disagree
Person Responsible: Deputy Chief Jolyon Bundrige (EMS Division). Fire Chief Slaughter and DC Bundrige can discuss our position further if needed.	**Implementation Date:** N/A

Recommendation 4:	
We recommend that the Atlanta Fire Rescue Department ensure all emergency vehicles are equipped with locked compartments to store medication bags.	
Proposed Action: An apparatus audit determined that there are eight units in Field Operations that will require locking solutions. Field Ops has checked the lock numbers and will coordinate with fleet services for replacement keys. Airport Operations has four units that will require locking solutions. The Airport Division is coordinating with Fleet Services at the airport to request a vendor quote for lock installation.	**Response:** Agree
Person Responsible: Deputy Chief Rod Smith (Technical Services Division)	**Implementation Date:** July 1, 2019
Recommendation 5:	
We recommend that the Atlanta Fire Rescue Department require dual controls when accessing the controlled substances storage in procedures to limit the risk of diversion.	
Proposed Action: Requesting a quote to install a S2 card reader with a keypad to provide additional monitoring and access control at Fire Station 7.	**Response:** Agree
Person Responsible: Deputy Chief Rod Smith (Technical Services Division) and Deputy Chief Jolyon Bundrige (EMS Division)	**Implementation Date:** December 31, 2019
Recommendation 6:	
We recommend that the Atlanta Fire Rescue Department update procedures to include a back-up person to witness waste in the event the emergency medical services supervisor is unavailable.	
Proposed Action: The draft policy has been updated to require an EMS Supervisor or another paramedic to witness the waste of medications. Due to fire engines not having the capability to transport patients to hospital emergency rooms and subsequently engaging with emergency room nurses and physicians, this provides a logistically advantageous solution for units to waste medications on site and remain in service.	**Response:** Agree
Person Responsible: Deputy Chief Jolyon Bundrige, EMS Division	**Implementation Date:** July 1, 2019

Recommendation 7:	
We recommend that the Atlanta Fire Rescue Department review controlled substances logs monthly to identify and address any inventory count discrepancies.	
Proposed Action: The draft policy has been updated to reflect a requirement for a monthly review to identify and address medication inventory discrepancies.	**Response:** Agree
Person Responsible: Deputy Chief Jolyon Bundrige (EMS Division), Deputy Chief Glen Riley (Field Operations Division) and Deputy Chief Antonio Webb (Airport Fire Division)	**Implementation Date:** July 1, 2019

Recommendation 8:	
We recommend that the Atlanta Fire Rescue Department require all fields be completed on the controlled substances log and medications used forms, and document when no medications were administered at each station.	
Proposed Action: The *Medications Used* form has been updated to provide additional accountability by requiring the acting officer in charge to also sign the form to ensure that all fields are accurate, and the documentation is complete.	**Response:** Agree
Person Responsible: Deputy Chief Glen Riley (Field Operations Division), Deputy Chief Antonio Webb (Airport Fire Division) and Deputy Chief Jolyon Bundrige (EMS Division)	**Implementation Date:** May 1, 2019

Recommendation 9:	
We recommend that the Atlanta Fire Rescue Department ensure that all medications used forms are collected and reconciled with the controlled substances logs to ensure accuracy of inventory.	
Proposed Action: The draft policy has been updated to reflect a requirement for a weekly count to ensure accuracy of the *Medications Used* forms and the controlled medications inventory count.	**Response:** Agree
Person Responsible: Deputy Chief Jolyon Bundrige, EMS Division	**Implementation Date:** May 1, 2019

Recommendation 10:	
We recommend that the Atlanta Fire Rescue Department consider the feasibility of consolidating procurement to help decrease the amount of excess inventory and encourage the potential benefits of economies of scale purchasing.	
Proposed Action: Consolidating the procurement of medicine and emergency medical supplies to decrease excess inventory and the accumulation of expired medications and supplies is not consistent with the current practice of the separation of general fund (field operations) and enterprise fund (airport operations) processes.	**Response:** Disagree

Person Responsible: Civilian Deputy Chief Ingrid Dixon (Fiscal & Administration Division)	**Implementation Date:** N/A

Recommendation 11:

We recommend that the Atlanta Fire Rescue Department update procedures to include a routine disposal process for expired medical inventory and retrain all applicable staff.

Proposed Action: The draft policy has been updated to reflect routine disposals quarterly.	**Response:** Agree
Person Responsible: Deputy Chief Jolyon Bundrige, EMS Division	**Implementation Date:** May 1, 2019

Recommendation 12:

We recommend that the Atlanta Fire Rescue Department enforce the verification of expiration date of drugs and medical supplies daily.

Proposed Action: The verification of medication and medical supplies expiration dates will be enforced. Additional accountability to ensure compliance will be monitored by requiring the acting officer in charge to also sign the daily EMS supplies check off sheets, *Medications Used* forms and EEMS providers checking the expiration dates of supplies and medications prior to use or administration.	**Response:** Agree
Person Responsible: Deputy Chief Glen Riley (Field Operations Division); Deputy Chief Antonio Webb (Airport Fire Division); Deputy Chief Jolyon Bundrige (EMS Division)	**Implementation Date:** May 1, 2019

Recommendation 13:

We recommend that the Atlanta Fire Rescue Department implement an electronic inventory management system. In the meantime, the department should:

- conduct a 100% inventory count of all drugs and medical supplies at emergency medical services locations
- enforce completion of all required documents, including the controlled substances logs, medication used forms, medication bag check-offs, and transfer of custody forms to track medical inventory
- perform and document periodic inventory counts and immediately resolve any discrepancies
- establish a retention policy for all inventory records
- incorporate the revised inventory procedures into the department's policy

Proposed Action: The Technical Services Division has identified an asset management system that will accommodate both airport and field operations. Field Operations is undergoing an inventory count and is expected to complete it no later than April 22, 2019. Airport Operations completed its inventory count April 15, 2019. COA Records Management has been contacted regarding an inventory records application for retention.	**Response:** Agree

Person Responsible: Deputy Chief Rod Smith (Technical Services Division); Deputy Chief Jolyon Bundrige (EMS Division)	**Implementation Date:** July 1, 2019
Recommendation 14: We recommend that the Atlanta Fire Rescue Department collaborate with Atlanta Information Management (AIM) to fully implement an electronic inventory management system into airport operations.	
Proposed Action: The Technical Services Division has identified an asset management system that will accommodate both airport and field operations.	**Response:** Agree
Person Responsible: Deputy Chief Rod Smith (Technical Services Division). Fire Chief Slaughter and DC Smith can fully explain AFRD's position if needed.	**Implementation Date:** November 1, 2019
Recommendation 15: We recommend that the Atlanta Fire Rescue Department determine if an electronic inventory management system is feasible for field locations.	
Proposed Action: The Technical Services Division has identified an asset management system that will accommodate both airport and field operations.	**Response:** Agree
Person Responsible: Deputy Chief Rod Smith (Technical Services Division)	**Implementation Date:** November 1, 2019