

# CFEMS MOBILE INTEGRATED HEALTHCARE

## A Fire-EMS Based Program

November 2024

Version 2.0

## INTRODUCTION

The Columbus Fire & Emergency Medical Services (CFEMS) Department supports the following tenets offered by the Center for Public Safety Excellence on the importance of facilitating a sustainable culture of innovation :

- Encouraging greater use of data to assess and use of analytics to solve complex community problems
- Ensuring that the services are up to date on the latest professional education, training, and credentialing
- Creating a spirit of partnership between the fire and emergency services, local government management, and community service agencies

To that end, the department has established the Center for Innovation and Leadership (CIL). The Center is an outgrowth of the department aimed at bringing together innovative minds and regional resources to solve community needs in a collaborative environment. The Center draws on leaders from public service, the business community, and academia to collaborate on initiatives that need innovative inertia. By working across disciplines and fostering relationships, the Center for Innovation and Leadership seeks to facilitate the development of creative partnerships to support the mission of the Fire Department to serve the community.

It is through the CIL that the Columbus Correct Care (CCC) initiative was established. Columbus Correct Care is a collaborative initiative designed to provide residents of Columbus, GA and Muscogee County with the right resources at the right time to support their medical needs for emergency and non-emergency care. By engaging community partners, the synergistic impact will be a force multiplier in identifying resources and services capable of meeting gaps in community healthcare. Community healthcare is a broad term encompassing the importance of not only medical health, but mental health and critical social services (such as substance abuse, housing and food security).

The Mobile Integrated Healthcare (MIH) program is a component of the Fire-EMS Department's larger Columbus Correct Care initiative.

# OVERVIEW

## 1. Project Background & Description

**Mobile Integrated Healthcare (MIH)** is a healthcare delivery model that utilizes mobile resources, such as paramedics and other healthcare professionals, to provide 'medical' services and patient care outside of traditional healthcare settings. This approach aims to enhance access to care, improve patient outcomes, and reduce healthcare costs by delivering services directly to patients in their homes or communities. These services are acutely vital to economically disadvantaged areas of our community. Traditional MIH programs often include:

Preventive Care: Regular check-ups, screenings, and health education to prevent illness and manage chronic conditions.

Post-Discharge Follow-Up: Monitoring and support for patients recently discharged from hospitals to prevent readmissions.

Emergency Medical Services (EMS) Integration: Expanding the role of EMS to include non-emergency care, reducing unnecessary hospital visits.

Chronic Disease Management: Providing ongoing care and support for patients with chronic illnesses to manage their conditions effectively.

Collaboration with Healthcare Providers: Coordinating with primary care physicians, specialists, and other healthcare providers to ensure comprehensive and continuous care.

MIH aims to provide timely and appropriate care, enhancing patient satisfaction and reducing the burden on emergency departments, hospital systems, correctional institutions and over-taxed first responders.

## 2. Project Scope

The Columbus Fire-EMS Department seeks to deploy several MIH units to meet the needs of the community. A review of incident call volume reveals the current need to deploy four (4) units. In an effort to kick-start the program with minimal investment by the City, the Fire-EMS Department has developed 2 community partnerships to integrate crucial services onto a mobile platform to better serve our community. This allows the program to begin to offer services while a sustainable funding source is being identified for personnel associated with this initiative. This project represents Phase 3 of the implementation of the Fire-Based EMS transition began in 2023. The following critical service areas have been initially identified:

- Unit 1: High volume users – by partnering a Fire Medic with a mid-level provider, the Fire-EMS Department seeks to have an impact on the high utilizer group (HUG) by offering alternative medical resources and limiting EMS transports to hospital emergency rooms. This unit will transition to low acuity users. MercyMed will provide the mid-level provider for the initial service period. This resource is slated for deployment in January 2025. Service level: Initial 8hr day (Mon-Fri); transition to 24hr.

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- Unit 2: Mental health – by partnering an advanced Emergency Medical Technician or Fire Medic with a mental health practitioner, the Fire-EMS Department seeks to have an impact on patients having a mental health crisis by offering alternative resources and limiting EMS transports to hospital emergency rooms and/or jail. Due to the potentially dangerous nature of some of these calls for service, a Columbus Police Department law enforcement officer will be assigned to this unit. Valley Healthcare will provide a mental health clinician for the initial service period. Service level: Initial 8hr day (Mon-Fri); transition to 24hr.
- Unit 3: Social services – by partnering an advanced Emergency Medical Technician or Fire Medic with a social worker, the Fire-EMS Department seeks to have an impact on patients who need crucial social services (i.e., substance abuse, food, housing security, or other social services) not offered by the Fire-EMS Department. This unit has a projected implementation date of 2026. Service level: (4-10hr days/40hr wk)
- Unit 4: Veterans support – by partnering an advanced Emergency Medical Technician or Fire Medic with local military service support entities, the Fire-EMS Department seeks to have an impact on our veteran community. This unit has a projected implementation date of 2026. Service level: (4-10hr days/40hr wk)

### 3. High-Level Requirements

To provide this service to the community, the following resources must be acquired:

- Vehicles to be able to deliver these services in the community
- Equipment, technology, and supplies to provide MIH services
- Personnel\* to staff these resources as identified

\* - The CFEMS will re-assign operational personnel to the first two MIH units. MercyMed and Valley HealthCare have committed a mid-level provider and mental health clinician (respectively) to the initial service period. The CPD has committed an officer to support the initial service period for Unit #2. **A sustainable funding source for personnel & equipment must be identified to maintain this program.**

### 4. Costs

Funding for certain equipment in this program can be (and has been sourced) sourced with competitive grants. Funding for personnel is certainly the largest component of this program. The Fire-EMS Department believes there are two alternatives to yield the best opportunity for success:

1. Partner entities assume the personnel costs associated with providing their personnel. If these entities can identify a sustainable funding mechanism for their personnel, they are more likely to remain engaged in providing resources to support the program. Note: billing for services provided will not yield a revenue neutral (or positive) position for partners.

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2. 'Non-traditional personnel' costs are incorporated and funded as part of the Fire-EMS budget. While hiring a nurse practitioner, mental health clinician, etc. would be new for the CCG, this practice is prevalent in progressive fire-service agencies across the country offering similar programs.

The following table summarizes updated cost estimate data for all units as recommended above and assuming 'non-traditional personnel' are part of the Fire-EMS Department. {Note: the costing is similar if the non-fire personnel are funded through their own entities.} This table assumes the deployment of all four (4) MIH units. Cost estimates are provided to run the units on one shift, two shifts, or as a 24hr service (for MIH Units 1 &2).

Costing details for each program element are provided in the Appendix.

	<u>INITIAL INVESTMENT</u>	<u>ANNUAL OPERATING COSTS</u>	<u>ANNUALIZED REPLACEMENT COSTS</u>
<b>VEHICLES*^</b>	\$375k	\$26k	\$56k
<b>EQUIPMENT*^</b>	\$318k	\$17,916	\$53k
<b>PERSONNEL 1-shift</b>	\$817k	\$817k + COLA	--
<b>PERSONNEL 2-shifts</b>	\$1.29M	\$1.29M + COLA	--
<b>PERSONNEL 24hr</b>	\$2.13M	\$2.13M + COLA	--

\* - Grant eligible: The CFEMS received a congressionally directed spending grant (\$139k) from Senator Ossoff to fund the vehicle/equipment for Unit 1

^ - Council approved the re-allocation of \$193,232.99 of ARP funds to fund the vehicle/equipment for Unit 2

## 5. Implementation Notes

- Program implementation will be a phased in approach as lead times for personnel & vehicle acquisition will be variable and market driven
- Full-service (24-hr) units will initially be implemented on a single shift (8/10-hr) basis until all personnel/funding are acquired and trained
- Stakeholder engagement will impact implementation timelines
- Full implementation can be expected within four (4) years if funding is provided
- Community challenges, needs and growth could necessitate the implementation of additional units or the modification of the delivery program structure
- Program performance measures will have a direct impact on the need for program expansion/contraction
- Program data capture will be shared with relevant stakeholder partners to drive targeted community-based programs

### 6. Conclusion

The Columbus Fire & Emergency Medical Services (CFEMS) Mobile Integrated Healthcare (MIH) program represents a significant step forward in enhancing community healthcare delivery. By leveraging partnerships and mobile resources, the program aims to improve patient outcomes, reduce unnecessary emergency department visits, and address critical community healthcare needs, including chronic disease management, mental health crises, social services, and support for veterans. With careful planning, phased implementation, and collaboration between key healthcare and social service partners, the MIH program has the potential to fill important service gaps and provide more efficient and effective care. However, sustainable funding, particularly for personnel, remains a critical component for the program's long-term success. The initial steps toward implementation are underway, with full program deployment expected within four years, and the program's progress will be closely monitored to determine future expansion needs based on community demands and outcomes.

# APPENDIX

## VEHICLE & EQUIPMENT COSTING

### Unit 1

EQUIPMENT COSTS				REPLACEMENT COSTS			
	Unit Cost	Quantity	Total	Annualized Term	Annualized Replacement Cost*	Annual Operating Cost	Potential ARP-Approved Vendor
Mobile Data Terminal (MDT)	\$ 3,950.00	1	\$ 3,950.00	4	\$ 1,068.90	\$ -	yes
Radio (handheld)	\$ 4,800.00	2	\$ 9,600.00	10	\$ 1,068.73	\$ -	yes
Radio (mounted)	\$ 5,500.00	1	\$ 5,500.00	10	\$ 612.29	\$ -	yes
I-pad w keyboard	\$ 1,200.00	1	\$ 1,200.00	3	\$ 424.48	\$ -	yes
Telemedicine kit	\$ 11,185.00	1	\$ 11,185.00	5	\$ 2,468.50	\$ 100.00	no
Medical bag (w/equipment)	\$ 650.00	1	\$ 650.00	3	\$ 229.93	\$ 150.00	yes
Oxygen kit	\$ 325.00	1	\$ 325.00	3	\$ 114.80	\$ 100.00	yes
Portable printer	\$ 245.00	1	\$ 245.00	3	\$ 86.67	\$ 75.00	no
Cardiac monitor	\$ 56,400.00	1	\$ 56,400.00	6	\$ 10,585.93	\$ 2,204.00	yes
Ford Explorer	\$ 50,000.00	1	\$ 50,000.00	8	\$ 7,997.15	\$ 6,500.00	unknown
		Total	<b>\$ 139,055.00</b>		<b>\$ 24,657.38</b>	<b>\$ 9,129.00</b>	
^ This is the actual amount of the gear *This assumes a 2% annual price increase Future Cost=Present Cost×(1+annual price increase)number of years We use a present value annuity factor to spread this future cost over X years. The formula for the annualized cost is: $Annualized\ Cost = \frac{Future\ Cost}{\sum_{t=1}^n (1+r)^{-t}}$ where r is the discount rate (assumed to be 0% here for simplicity) and n is the number of years.							

The following represents the personnel cost to run this unit either one shift, two shifts, or for 24 hours.

Note: staffing a unit for 24hrs incorporates cost for additional personnel to cover vacation, sick time, etc.

	Unit 1		
	FireMedic	NP	Total
1 - shift	\$ 91,045.53	\$ 126,555.50	<b>\$ 217,601.03</b>
2 - shifts	\$ 182,091.06	\$ 253,111.00	<b>\$ 435,202.06</b>
24hr	\$ 364,182.12	\$ 506,222.00	<b>\$ 870,404.12</b>

The Fire-EMS Department anticipates billing for services to recoup some expenditure is an option.

# Columbus Correct Care

## Program Overview

### Unit 2

EQUIPMENT COSTS				REPLACEMENT COSTS			
	Unit Cost	Quantity	Total	Annualized Term	Annualized Replacement Cost	Annual Operating Cost	Potential ARP-Approved Vendor
Mobile Data Terminal (MDT)	\$ 3,950.00	1	\$ 3,950.00	4	\$ 1,068.90	\$ -	yes
Radio (handheld)	\$ 4,800.00	2	\$ 9,600.00	10	\$ 1,068.73	\$ -	yes
Radio and Modem (mounted)	\$ 5,500.00	1	\$ 5,500.00	10	\$ 612.29	\$ -	yes
I-pad w keyboard	\$ 1,500.00	1	\$ 1,500.00	3	\$ 530.60	\$ -	yes
Telemedicine kit	\$ 11,185.00	1	\$ 11,185.00	5	\$ 2,468.50	\$ 100.00	no
Medical bag (w/equipment)	\$850.00	1	\$ 850.00	3	\$ 300.34	\$ 150.00	yes
Airway Kit	\$2,877.99	1	\$ 2,877.99	3	\$ 1,017.84	\$ 100.00	yes
Oxygen kit	\$ 425.00	1	\$ 425.00	3	\$ 150.17	\$ 75.00	no
Portable printer	\$ 245.00	1	\$ 245.00	3	\$ 86.67	\$ 100.00	no
Records management software	\$ 7,500.00	1	\$ 7,500.00	1	\$ 7,500.00	\$ 7,500.00	no
Cardiac monitor	\$ 49,600.00	1	\$ 49,600.00	6	\$ 9,310.79	\$ 2,204.00	yes
Sprinter Van (Response Package)	\$ 100,000.00	1	\$ 100,000.00	8	\$ 14,645.74	\$ 6,500.00	unknown
		Total	<b>\$ 193,232.99</b>		<b>\$ 38,760.57</b>	<b>\$ 16,729.00</b>	
			^ Reappropriated ARP funds		*This assumes a 2% annual price increase		
			Future Cost=Present Cost*(1+annual price increase)number of years				
			We use a present value annuity factor to spread this future cost over X years.				
			The formula for the annualized cost is: Annualized Cost= $\sum_{t=1}^n \frac{1}{(1+r)^t}$ Future Cost				
			where r is the discount rate (assumed to be 0% here for simplicity) and n is the number of years.				

The following represents the personnel cost to run this unit either one shift, two shifts, or for 24 hours.

Note: staffing a unit for 24hrs incorporates cost for additional personnel to cover vacation, sick time, etc.

	Unit 2			
	FF/AEMT	MHC	L/E	Total
1 - shift	\$ 82,822.91	\$ 81,222.50	\$ 83,528.90	<b>\$ 247,574.31</b>
2 - shifts	\$ 165,645.82	\$ 162,445.00	\$ 167,057.80	<b>\$ 495,148.62</b>
24hr	\$ 331,291.64	\$ 324,890.00	\$ 250,586.70	<b>\$ 906,768.34</b>

The Fire-EMS Department anticipates billing for services to recoup some expenditure is an option.

# Columbus Correct Care

## Program Overview

### Unit 3

EQUIPMENT COSTS				REPLACEMENT COSTS			
	Unit Cost	Quantity	Total	Annualized Term	Annualized Replacement Cost	Annual Operating Cost	Potential ARP-Approved Vendor
Mobile Data Terminal (MDT)	\$ 3,950.00	1	\$ 3,950.00	4	\$ 1,068.90	\$ -	yes
Radio (handheld)	\$ 4,800.00	1	\$ 4,800.00	10	\$ 1,068.73	\$ -	yes
I-pad w keyboard	\$ 1,500.00	1	\$ 1,500.00	3	\$ 530.60	\$ -	yes
Medical bag (w/equipment)	\$850.00	1	\$ 850.00	3	\$ 300.34	\$ 150.00	yes
Oxygen kit	\$ 425.00	1	\$ 425.00	3	\$ 150.17	\$ 100.00	yes
Portable printer	\$ 245.00	1	\$ 245.00	3	\$ 86.67	\$ 75.00	no
Cardiac monitor	\$ 56,400.00	1	\$ 56,400.00	6	\$ 10,585.93	\$ 2,204.00	yes
Ford Explorer	\$ 50,000.00	1	\$ 50,000.00	8	\$ 7,997.15	\$ 6,500.00	unknown
		Total	<b>\$ 118,170.00</b>		<b>\$ 21,788.49</b>	<b>\$ 9,029.00</b>	
					*This assumes a 2% annual price increase		
					Future Cost=Present Cost×(1+annual price increase)number of years		
					We use a present value annuity factor to spread this future cost over X years.		
					The formula for the annualized cost is: Annualized Cost= $\sum_{t=1}^n \frac{1}{(1+r)^t}$ Future Cost		
					where r is the discount rate (assumed to be 0% here for simplicity) and n is the number of years.		

The following represents the cost to run this one shift. Because most of the resources that would be available to support this unit are only open during normal business hours, there is no need to run this unit for multiple shifts.

	Unit 3		
	FF/AEMT	SW	Total
1 - shift	\$ 82,822.91	\$ 76,222.50	<b>\$ 159,045.41</b>
2 - shifts			
24hr			

It is unclear at this time if billing for services will be an option to recoup some expenditure.



# Columbus Correct Care

## Program Overview

### Unit 4

EQUIPMENT COSTS				REPLACEMENT COSTS			
	Unit Cost	Quantity	Total	Annualized Term	Annualized Replacement Cost	Annual Operating Cost	Potential ARP-Approved Vendor
Mobile Data Terminal (MDT)	\$ 3,950.00	1	\$ 3,950.00	4	\$ 1,068.90	\$ -	yes
Radio (handheld)	\$ 4,800.00	1	\$ 4,800.00	10	\$ 1,068.73	\$ -	yes
I-pad w keyboard	\$ 1,200.00	1	\$ 1,200.00	3	\$ 530.60	\$ -	yes
Medical bag (w/equipment)	\$650.00	1	\$ 650.00	3	\$ 300.34	\$ 150.00	yes
Oxygen kit	\$ 325.00	1	\$ 325.00	3	\$ 150.17	\$ 100.00	yes
Portable printer	\$ 245.00	1	\$ 245.00	3	\$ 86.67	\$ 75.00	no
Cardiac monitor	\$ 56,400.00	1	\$ 56,400.00	6	\$ 10,585.93	\$ 2,204.00	yes
Sprinter Van	\$ 175,000.00	1	\$ 175,000.00	8	\$ 25,375.00	\$ 6,500.00	unknown
		Total	\$ 242,570.00		\$ 39,166.34	\$ 9,029.00	
					*This assumes a 2% annual price increase		
					Future Cost=Present Cost*(1+annual price increase)number of years		
					We use a present value annuity factor to spread this future cost over X years.		
					The formula for the annualized cost is: Annualized Cost= $\sum_{t=1}^n \frac{1}{(1+r)^t}$ Future Cost		
					where r is the discount rate (assumed to be 0% here for simplicity) and n is the number of years.		

The following represents the cost to run this one shift. Because most of the resources that would be available to support this unit are only open during normal business hours, there is no need to run this unit for multiple shifts.

	Unit 4		
	FireMedic	Military	Total
1 - shift	\$ 91,045.53	\$ 101,222.50	\$ 192,268.03
2 - shifts			
24hr			

It is unclear at this time if billing for services will be an option to recoup some expenditure.

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## Program Overview

### TOTAL PERSONNEL COSTING (assuming all CCG personnel )

Includes salary & benefits & all miscellaneous

- 10 CFEMS PERSONNEL
- 4 LAW ENFORCEMENT OFFICERS (CPD)
- 1 BUSINESS ANALYST
- 4 NURSE PRACITITIONERS
- 4 LICENSED MENTAL HEALTH CLINICIANS
- 1 SOCIAL WORKERS
- 1 MILITARY MEMBER

POSITION	TOTAL COST
FF/MEDICS & FF/AEMTS (10)	\$869,342.20
NURSE PRACTITIONERS (4)	\$506,222.00
LAW ENFORCEMENT OFFICERS (4)	\$250,586.70
BUSINESS ANALYST (1)	\$76,810.59
MENTAL HEALTH CLINICIANS (4)	\$324,890.00
SOCIAL WORKER (1)	\$76,222.50
MILITARY MEMBER (1)	\$101,222.50
TOTAL	<b>\$2,195,286.49</b>

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