

EXCLUSIVE DISTRIBUTOR



MANUFACTURED BY



# MOBILE MEDICAL UNIT COVID-19 Pandemic Emergency

PRODUCT GUIDE



## Product Overview

### Introducing the CT Defense Mobile Medical Unit

*A state-of-the-art modular and advanced response vehicle.*

Able to rapidly deploy as needed, this mobile platform is ideal for many circumstances, ranging from a response to serious evolving medical circumstances to providing backup medical support.

#### Key features of the CT Defense 'COVID-19' Mobile Medical Unit

- Ready to rapidly deploy, 12 bed capacity, plug and play unit
- Sanitization spray/washdown at entrance
- HEPA filtered climate controlled clinic environment
- Proprietary germ-free entrance/exit flow design
- Sterile negative pressure clinic conditions
- Separated nurses' station
- Patient triage area
- 2-day emergency standalone capacity
- Tier 4 diesel generator
- Fresh/gray water tanks with 2-day capacity
- Built with antibacterial hospital-grade aseptic materials
- Optional turnkey service
- Restroom facility and shower
- Can be deployed within 2-4 hours upon arrival at destination



#### This unit serves as a solution for multiple problems, as it offers;

- A simple, quick, and elegant solution to increased medical demand.
- Localized onsite testing and examinations.
- Medium-term care for the worst days of illness (ICU units available).
- Long-term care to relieve overwhelmed hospitals.
- An external, contained medical unit.
- Many additional solutions to evolving needs.

## Product Overview

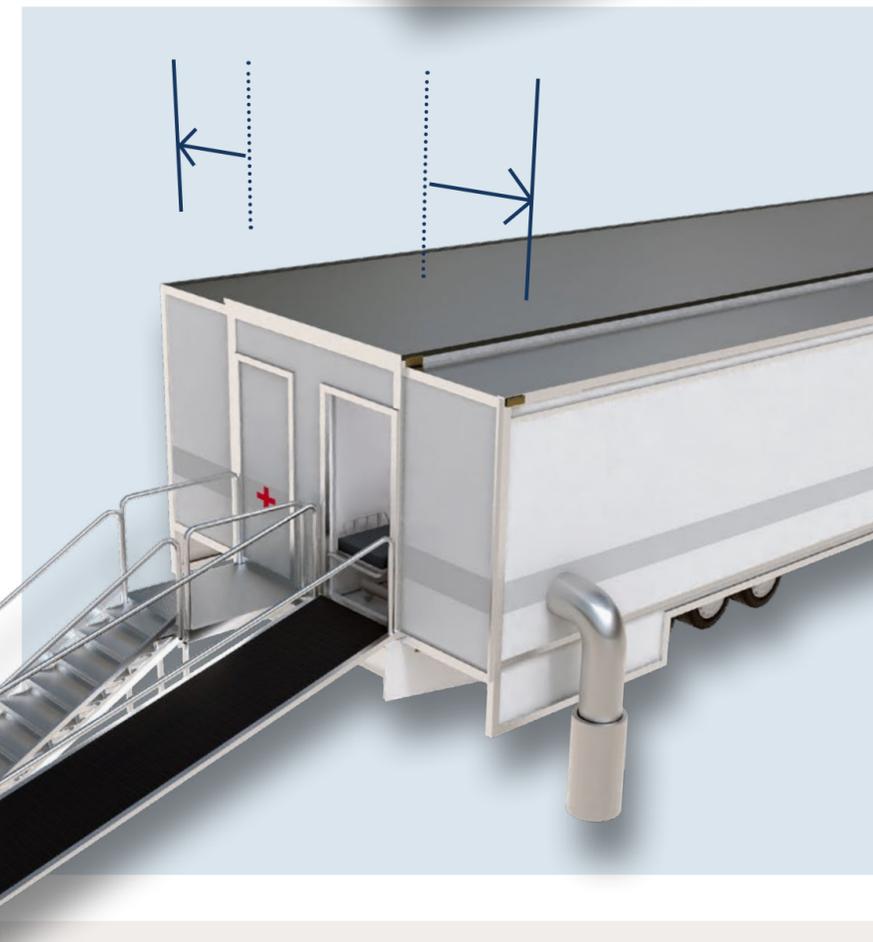
### Fully Transportable

The CT Defense Mobile Medical Unit is your solution to multiple problems, as it is fully transportable. Measuring 53' long and weighing 53,000 lbs, all that is needed to move your unit is a Class 8, 3 axle tractor legally capable of a combined weight of up to 80,000 lbs. A tractor with a measurement of 71" from the center of the 5th wheel to front of the rear fender is required. This should not be an issue as the vast majority of Semi Tractors on the road meet this requirement. It is likely that your municipality already has provisions to move your unit as needed.

### High-Quality Standards

Having been born out of a military need, the design adheres to strict quality requirements and is built of the highest quality materials. Elavo and CT Defense are proud to present the Mobile Medical Unit, redesigned for civilian medical use.

The CT Defense Mobile Medical Unit is a patented design and complies with ISO-9001 certifications, which adhere to the standards of NMX-CC-9001.



### Expandable Design

While travelling, the CT Defense Mobile Medical Unit is 8ft wide. Once set up, it measures 15'9" wide. This unique patented expansion feature nearly doubles the usable space and allows for quick and easy set-up.

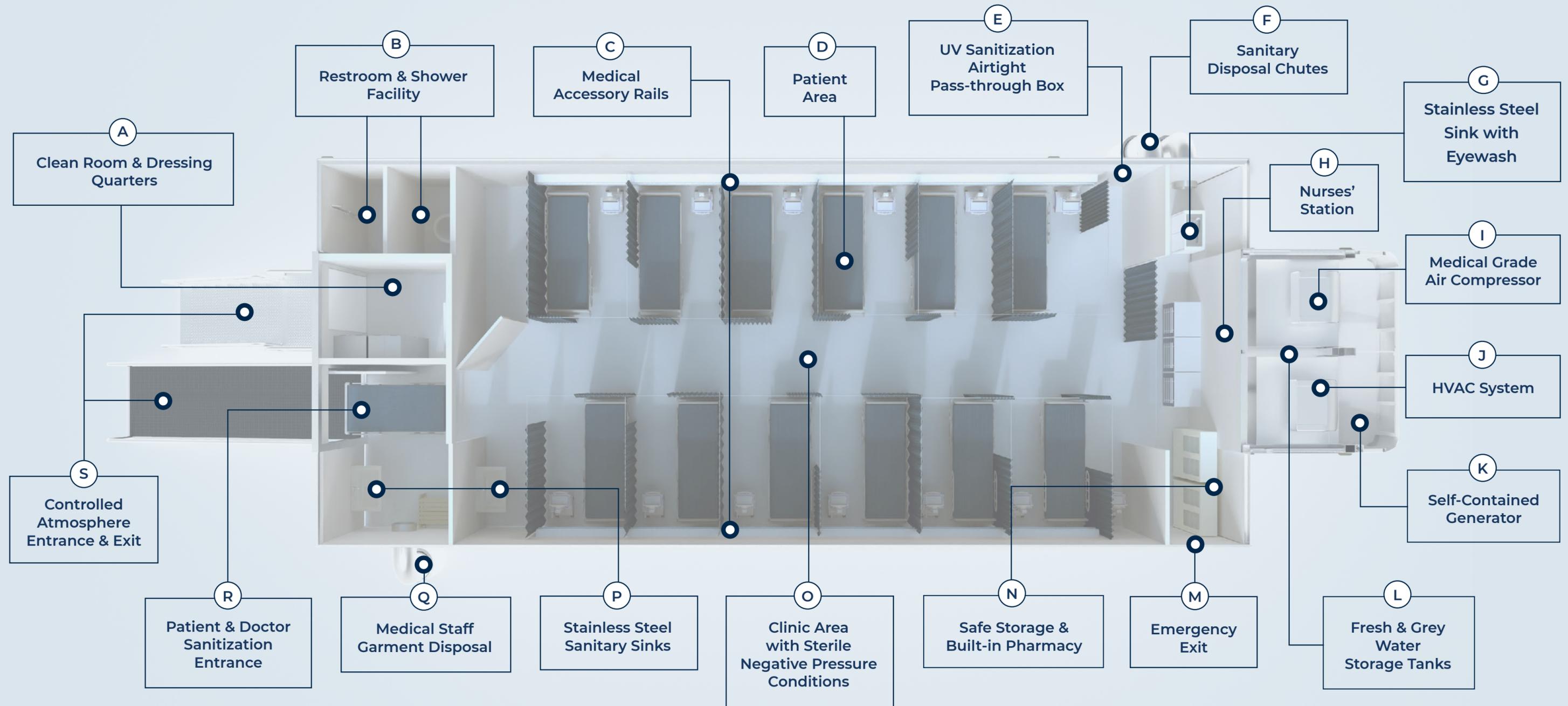
Thanks to CT Defense's advanced engineering, when the sides are expanded, the floor is able to remain flat and level. The patented electrically-powered Hydraulic Expansion System opens with the push of a button.

## Product overview



The Mobile Medical Unit provides a host of amenities. One of the most important is the 633 square feet of completely isolated clinic space. In addition, there are 12 separated beds with provisions to support individual monitors and medical headboards that allow complete customization per bed. The unit also offers a conveniently placed nurses' station that allows monitoring of all patients. Waste can be taken care of via designated hazardous material chutes located on both ends of the unit.

## Mobile Medical Unit Layout



## Key Point Features

- A Clean Room & Dressing Quarters**  
Conveniently located before the exit, this room allows room for medical staff members to change back into their personal attire before exiting the unit.
- B Restroom & Shower Facility**  
A restroom and shower for medical staff are located at the rear of the unit next to the exit.
- C Medical Accessories Rails**  
For easy attachment of medical supplies such as patient monitors and glove storage among hundreds of other options.
- D Patient Area**  
Each patient area offers a bed, medical-grade antibacterial curtains, hookups that allow for oxygen, medical air, and suction. Each area also offers 8 outlets that are color coded to emergency power.
- E UV Sanitization Airtight Pass-through Box**  
Near the nurses' station, there is an airlock box for the purpose of sanitizing medicine or other small items that need to be brought into or taken out of the unit.
- F Sanitary Disposal Chutes**  
Included in the unit is a waste disposal system to handle general, sharps, and biological waste.
- G Stainless Steel Sink with Eyewash**  
In the nurses' station, there is a stainless steel sink with coved edges to prevent snagging and to provide a safe working environment. Also Included is a flip-up style eyewash station.
- H Nurses' Station**  
Area for nurses with a protective curtain for safety and privacy. This station also houses the ethernet connection and medical supply storage and fridges.
- I Medical Grade Air Compressor**  
At the front of the unit, there is a medical-grade air compressor to supply medical air and suction.
- J HVAC System**  
The unit is equipped with (4) 5-ton AC units and (4) heaters, all of which can be operated by remote control.
- K Self-Contained Generator**  
The Mobile Medical Unit comes equipped with a Tier 4 (55kw) generator, which serves as a backup power source. The electrical system is primarily designed for shore power to be the main source of electricity. However, with the addition of a second generator (at customer's expense), the unit can run on its own power for as long as fuel can be supplied.
- L Fresh & Gray Water Storage Tanks**  
The built-in water tanks provide enough for two days of emergency use.
- M Safe Storage & Built-in Pharmacy**  
This area contains lockable cabinets for controlled substances and storage to organize medical supplies.
- N Emergency Exit**  
An emergency door is located on the opposite end of the unit for a safe exit in the event of an emergency.
- O Clinic Area with Sterile Negative Pressure Conditions**  
The clinic area contains 12 beds and measures 633 sq. ft.
- P Stainless Steel Sanitary Sinks**  
Upon entry of the unit, there are two stainless steel sinks to stay on top of sanitation needs.
- Q Medical Staff Garment Disposal**  
Conveniently located within the provided staff changing area is the Medical Staff Garment Disposal. Attached outside is an approved waste receptacle with appropriate liner for easy disposal.
- R Patient & Doctor Sanitization Entrance**  
In the ceiling there are 4 sanitizing sprayers, allowing doctors and nurses to disinfect upon entrance and exit of the unit. This feature is an important aspect of the design to create a sanitary clinic environment.
- S Controlled Atmosphere Entrance & Exit**  
The entrance and exit are equipped with ramps for use with patients on stretchers. The unique entrance and exit design allows for a controlled clinic environment.



## Patient area

Every patient area is equipped with ethernet ports to allow for networked communications. Each patient area has 8 outlets, conveniently located within the medical headboard. All mattresses are covered with germ-resistant material, making them easy to clean and sanitize.

### Curtains

Medical grade antibacterial curtains cover an area of 6.56 ft x 5.24 ft to provide privacy for patients. This design allows curtains to be easily removed, if needed.

### Each bed offers medical supply systems

- 2 oxygen gas supply ports
- 1 medical air supply port
- Suction available through vacuum venturi method

### Each Bed Offers Multiple Medical Ports

Each bed comes equipped with two horizontal rails that run the length of the unit, offering ample space to mount medical items to provide a clean and safe workspace. These rails offer endless options for mounting all your medical needs.



## Clinic Area



This is a view of the 12-bed clinic area. Here you can see the included germ-resistant PVC curtains installed, providing privacy and protection for each patient.



The nurses' station can be found at the end of the unit. As seen here, there is ample lighting throughout the unit, ensuring safe usage.







## Installation & Setup

Elavo's commitment is to provide a complete, mobile facility with zero defects, ready and installed with full confidence so you can perform uninterrupted services to the community.

### Turnkey Service

Elavo's turnkey service includes a certified installation technician and up to two staff members for the complete setup and installation of the Mobile Medical Unit. Maintenance or repairs can be aided via phone call or video conference, to enable reliable operations. This service is provided to ensure stress-free operation and deployment.

An Elavo technician will be on-site to assist with initial installation, set-up, and to educate you on;

- Leveling
- Pump operation for plumbing
- Proper operation of the transfer switch
- Expansion and retraction of the sides
- Setup of the HEPA filtration system
- And more

### Installation

Prior to delivery of the Mobile Medical Unit, Elavo will work with you to determine where the best suitable installation can occur.

Your pre-installation Consultation includes advice on;

- The overall location of the unit and the surroundings
- Power supply
- A location grade assessment
- Accessibility

### Documentation

Each Mobile Medical Unit is delivered with a full set of as-built drawings and electrical diagrams.





## End Users Responsibilities

While setup and installation by Elavo will be included with the purchase of the unit, the client will be responsible for supplying the following;

- A suitable location for the unit
- An on-site building engineer
- Project manager (if building engineer is not appointed as such)
- Electrician
- Plumber
- Fuel source (for diesel generator)
- Diesel generator technician available or on call (no need to have on site daily)
- Waste services
- Electrical cabling between power source and unit
- Power source
- 1.5 inch potable water hose (if water source is beyond 50 feet)
- Water source
- Licensed medical staff to run the unit
- Oxygen tanks

The following criteria should be met to satisfy the requirement for a “suitable location;”

- Nothing interfering with unit within 25 feet
- Nothing above the unit that might fall or interfere with unit such as tree branches, powerlines, a bridge etc.
- Site is free of sinkholes, soft sand, mud, or anything that would prevent solid leveling
- No large trees within 50 feet of the unit.
- 50 feet of water hose will be provided with the unit. It is ideal to have the unit within 50-100 feet of water and electrical utilities.
- Site is at least 200 feet from a river or any body of water
- Site has been determined, as best as possible, not to be at risk of flood



## Workflow

The Mobile Medical Units are engineered and equipped for the most efficient workflow. The facility is divided into designated zones for optimal staff performance. Each unit is equipped with HEPA filtered supply air and the necessary equipment required for a safe workflow throughout the medical treatment process. Additionally, workstations, storage, supply areas, gowning areas, and staging tables have been strategically placed for maximum safety and performance.



This solution meets BSL-3 Laboratory requirements and Laboratory Facility guidelines. The room is supplied with HEPA filtered air and the return air is HEPA filtered before being recirculated to other areas of the medical space. All walls and dividers are medical grade FRP materials with seamless welds, coved corners and radius edges and are compatible with all standard gas and vapor decontamination systems.

### Mechanical Specifications

A heating, ventilation and air conditioning (HVAC) system is installed in the Mobile Medical Unit. The HVAC system is engineered to maintain a comfortable working temperature and humidity, and provides an inward flow of air into the BSL-3 space. In the “BSL-3 Enhanced” medical space, the mechanical ventilation also prevents recirculation to spaces outside of the laboratory.

### Electrical Specifications

Connections for utility inputs are provided via easy to access cam lock connectors. The included on-board Tier 4 Emergency Back-up diesel generator provides 55kw of power. This generator is more than enough for emergency back-up. The system is primarily designed for shore power to be the main source of electricity. If the intention is to run off of generator power, there will need to be a secondary generator at customer’s expense, as hospitals require two sources of power. Check with your local jurisdiction’s requirements.

### Shore Power Requirements

220V, 200amp, 3Phase, Cam Lock Connectors. (Can be 2Phase for European Deployment)

### Plumbing Specifications

The plumbing system includes an on-board fresh water tank and an on-demand electric water pump to provide running water for the sinks. The fresh water tank is equipped with a low-level monitor.

The gray/black water tank is designed to be gravity drained. The Mobile Medical Unit will arrive completely plumbed and ready for use. The gray water tank is equipped with a max. capacity-level monitor. (1) Stainless Steel Sink, in the nurse’s station. The unit will be delivered with easy and accessible water and sewer connections. Although the system is designed to be run off of shore water supply, the unit has enough storage capacity for two days of fresh/gray water.

### Construction Specifications

The Mobile Medical Units are designed to be exceptionally durable. To achieve this, only the highest grade, compatible materials are used in the unit’s construction. The interior walls, constructed of high performance fiberglass reinforced plastic, or FRP, are thin, flexible plastic panels made of strong polyester resin, reinforced with fiberglass. These panels provide a seamless interior suitable for frequent wash-downs with sanitizing agents, as well as bio-decontamination gas.

## Facilities & Equipment

Elavo's Mobile Medical Units are delivered fully-equipped and ready for on-site deployment.

### FACILITIES FOR HOSPITALIZATION ROOM

<b>Medical Accessory Rails</b>	Each bed comes equipped with two horizontal rails that run the length of the unit, offering ample space to mount medical items.
<b>Waste Control</b> Discharge Door (1) Discharge Door (1) Rigid Container (1)	For biological waste - infectious contagious. For general waste. For sharps waste.
<b>Doors</b>	(1) For medical access. (1) For stretcher access. (1) Emergency exit.
<b>Medical Workers' Clean Room and Dressing Quarters (1)</b>	Equipped with lockers for nurses and doctors, bench, ½ bath and shower.
<b>Stretcher Access Area (1)</b>	Access ramp with curtailed entry area for patient control and cleaning.
<b>Bacterial Exclusion Area (1)</b>	Access zone to the secured medical area for safety equipment cleaning.
<b>Interior Lighting</b>	Lamps on each bed (1). 18W LED in the hallway (5). And extra lamps in the nurses' area and medical area.
<b>Contacts &amp; Switches</b>	(96) 110V duplex contacts, grounded and isolated. Depending on the equipment to be used (4 for each bed on two plates).
<b>HVAC</b>	(4) 5 ton ceiling-mounted air conditioners. (4) heaters.
<b>Communication / Network</b>	Equipped with end-to-end ethernet network.

### SAFETY

<b>Fire Extinguishers</b>	(5) Fire extinguishers distributed in strategic points.
<b>Smoke Detectors</b>	(4) Distributed in the unit.
<b>Signaling</b>	Evacuation route with alphabetic and analog signals. According to safety standards.
<b>Emergency Lighting</b>	(8) 20W Rechargeable LED lamps.

## Facilities & Equipment

ELAVO's Mobile Medical Units are delivered fully-equipped and ready for on-site commissioning.

### EQUIPMENT FOR HOSPITALIZATION ROOM

<b>Supply &amp; installation of Hospital Beds</b>	(12) manual hospital beds. Overall measurements: 6'2" long by 2'7" wide. Mattress thickness 6".
<b>Supply &amp; installation of Antibacterial Curtains</b>	Curtain to cover an area of 6.56 ft x 5.24 ft to provide privacy for patients. The nurse's station is also protected by antibacterial curtains.
<b>Supply &amp; installation of Bed Head Module</b>	Constructed of aluminum, includes specific ducts for gas, electrical, suction, oxygen and air.
<b>Supply &amp; installation of Manually Operated Manifold for medical gases (Oxygen and Medical Air)</b>	Manually operated manifold consisting of: two manifold bars with upper valve and rupture disc for each cylinder, and pigtailed with check valve at the ends, necessary to connect the cylinders of each bench, two 0-3911.41 psi high pressure manometers to indicate the pressure on each bench, two shut-off valves for high pressure, high flow, with safety, two high pressure regulators, high flow, pre-calibrated, two valves to prevent transfer from one bench to another, one three-way valve, one line regulator for adjusting outlet pressure, one pressure switch to connect to the alarm, one 0-227.57 psi pressure line manometer and a relief valve for venting.
<b>Supply of Medical Grade Compressor 220 V power supply</b>	It includes: refrigeration dryers, condensation monitor, CO monitor, filtration system, regulation system, control panel, vertical tank 132 gal.
<b>Cylinder Mounting System</b>	Universal cylinder clamps to accommodate many different sizes.
<b>Medical grade dual oxygen cylinder manifold</b>	It includes; pressure regulators, 0.51" ball type brass valves, 0.51" brass check valves, metal mounting bracket.
<b>Access Ramp for Stretchers</b>	Entrance and exit ramps to allow access for stretchers.
<b>Ventilation System</b>	HEPA filter H14. Air changing rate estimated 12 cycles/hour. 100% fresh air.
<b>Refrigerators</b>	(2) Refrigerators; one for patient samples and another for medicine.

## Capabilities & Technical details

<b>Trailer dimensions when traveling</b>	Length overall: 53 ft. / Width : 8.5 ft. / Height : 13.4 ft. / Weight: 53,000 lbs. (according to US regulations).
<b>Fabrication</b>	Certified quality high-resistance carbon steel chassis. Medical Grade FRP Material
<b>Structure</b>	Certified quality high-resistance steel and tubular profile.
<b>Exterior Finishing</b>	High gloss polar white FRP, high impact resistant.
<b>Interior Finishing</b>	2" thermal and acoustic insulation. Certified quality plywood covered with FRP walls and ceilings. Hospital grade aseptic materials.
<b>Floor</b>	Vinyl laminated wood floor.
<b>Interior Electrical Installation</b>	120v heavy-use outlet and switches. Dimmable LED lighting. Color-coordinated outlets to emergency back-up.
<b>Exterior Electrical Installation</b>	2 weatherproof electrical 220v outlets. Exterior LED lighting.
<b>Electrical panel</b>	200 Amp Service Panel. Power is routed through Automatic Transfer Switch, allowing easy shore power hook-up. Tier 4 Emergency Back-up 55Kw built-in and detachable Diesel generator.
<b>HVAC</b>	6 York Air Conditions Units. Control Capabilities (Remote Control).
<b>Fresh &amp; Grey Water Storage</b>	Built-in water storage tanks can hold up to 200 gallons of fresh water and 100 gallons of gray water.
<b>Entrance &amp; Exit</b>	The unit's Entrance and Exit are designed to contain Contaminated Air via Proprietary Germ-free Entrance/exit Flow Design, significantly reducing community impact. All stairs and ramps come equipped with Stainless Steel handrails. Ramps provide Wheelchair and Stretcher Access.
<b>Expansion System</b>	4 Integrated Leveling Devices built-into chassis. Electrically-powered Hydraulic Expansion System (with a push of a button).
<b>Fire / Security</b>	2 Smoke detectors. 2 fire extinguishers. Emergency Lighting and Exit sign. Fire Retardant Application to entire vehicle.
<b>Suspension</b>	3 axle with Air Ride Suspension (25,000 lbs per axle). 12 tires 235 / 75 R 17.5
<b>Trailer Exterior Lights</b>	According to transportation standards.

## Optional Features

There are many optional features that can be added to your Mobile Medical Unit.

### Satellite Communications

This system will allow internet and wifi throughout the unit. It is an important consideration to enable communication and assistance in most locations. This feature is optional, but is necessary for the use of Telemedicine.

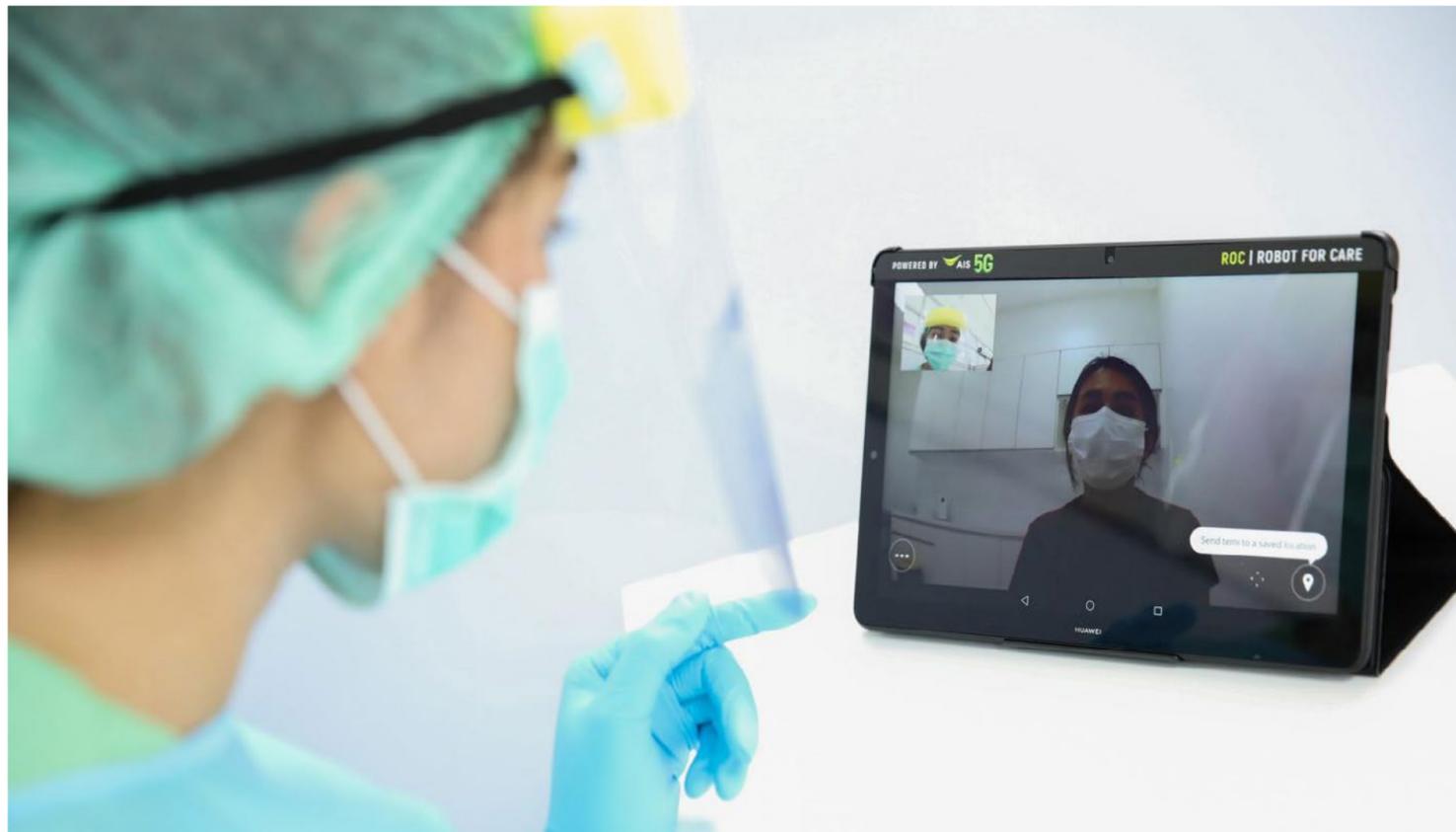
### Telemedicine

A disaster is no time to have to recruit highly trained physicians with experience in disaster management and critical care. We are therefore proud to offer, immediately available, up to 24/7 ICU Telemedicine service from ROECCS® - at a substantially discounted rate - as an option for your purchase.

ROECCS, Remote Operational Emergency Critical Care Services, utilizes physicians who have been providing critical care services to a myriad of US hospitals for over three years and now boasts a panel of multicultural, multilingual physicians who are not only American board certified subspecialists in all forms of critical care, but are also certified in the Neurocritical Care Society's Emergency Neurologic Critical Care (ENLS) and the SCCM's Fundamentals of Disaster Management (FDM).

Initially designed for use in remote combat locations by a US Navy Critical Care physician, the ROECCS system is now tailored and scaled to meet your needs.

- Uses available onsite non-physician personnel through whom high level medical decision making and ongoing critical care can be immediately provided.
- 3 advanced practice nurses and/or paramedics are necessary to provide hands-on procedures; the unit can otherwise be fully managed by the ROECCS® physicians.
- The level of critical care provided can be expected to equal that of most community hospitals, including mechanical ventilation and hemodialysis.
- ROECCS offers the ability to forego costly and dangerous medical evacuations by providing immediate, on-demand support.
- The annual subscription fee provides for all administrative fees, physician recruitment, maintenance, biannual testing, mock patient care, and the secure knowledge that your deployed unit is immediately able to function smoothly with expert 24/7 physician staffing.



## Optional Equipment

For some medical situations, more intensive care capabilities may be required. This can easily be achieved at the factory level or in the field, as needed. Your Mobile Medical Unit has been designed so that changes can be made quickly and efficiently to adapt to evolving medical situations.

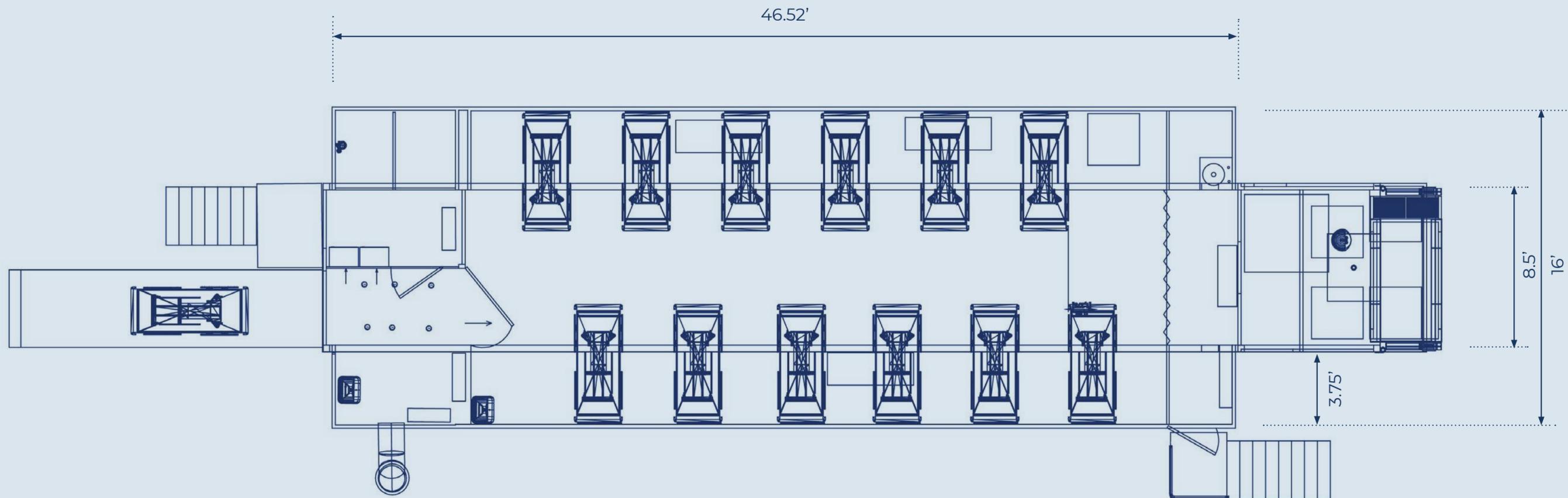
Optional upgrades can include but are not limited to:

- Respirators
- Defibrillators
- Patient Monitors
- Ventilators
- CPAP & BPAP systems
- Syringe Pumps
- Infusion Pumps
- Blood Warmers
- X-Ray Machine



### Capabilities & Technical details

Dimensions of the Mobile Medical Unit when installed



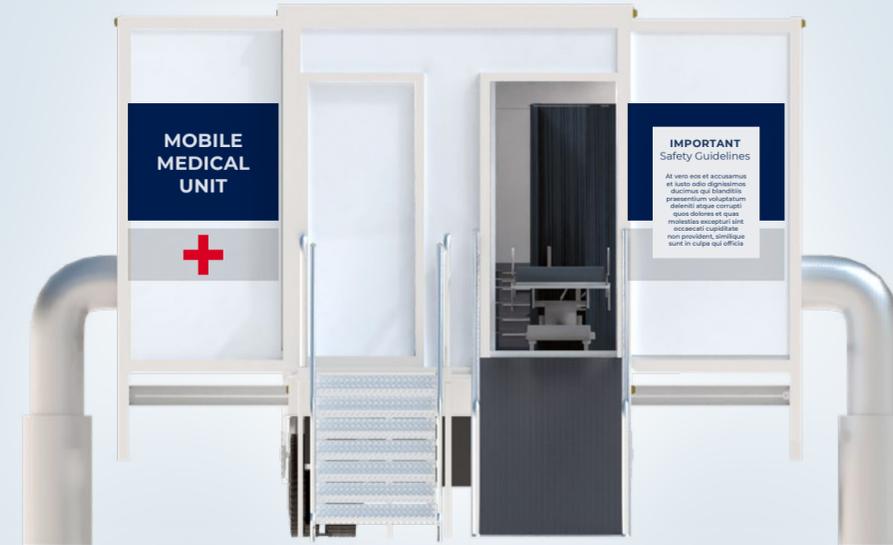
Required space for installation & operation : 30'W x 70'L x 13.45'H

## Custom Graphic Design

Elavo offers custom graphics and design for each Mobile Medical Unit.

This includes;

- A custom design consultation to define your needs and colors
- Informative exterior and Interior signage for safety
- Translations of signage in the desired language



Canvas will be the stock choice used for the exterior graphics due to its durability and ease of installation.

This offers;

- Simple installation and removal of exterior graphics (1-2 hours)
- Easy removal to protect the graphics during shipping
- The ability to change graphics as needed

*Important: Please contact Elavo as soon as possible, as this process requires a 2-4 week lead time*



## The Manufacturer

CT Defense has over 40 years of experience in the design and manufacturing of special mobile units. CT Defense's excellent work has been used for everything from military operations to mobile movie theaters. With over 200 skilled employees, CT Defense has proven to be able to adapt to the changing needs around them.



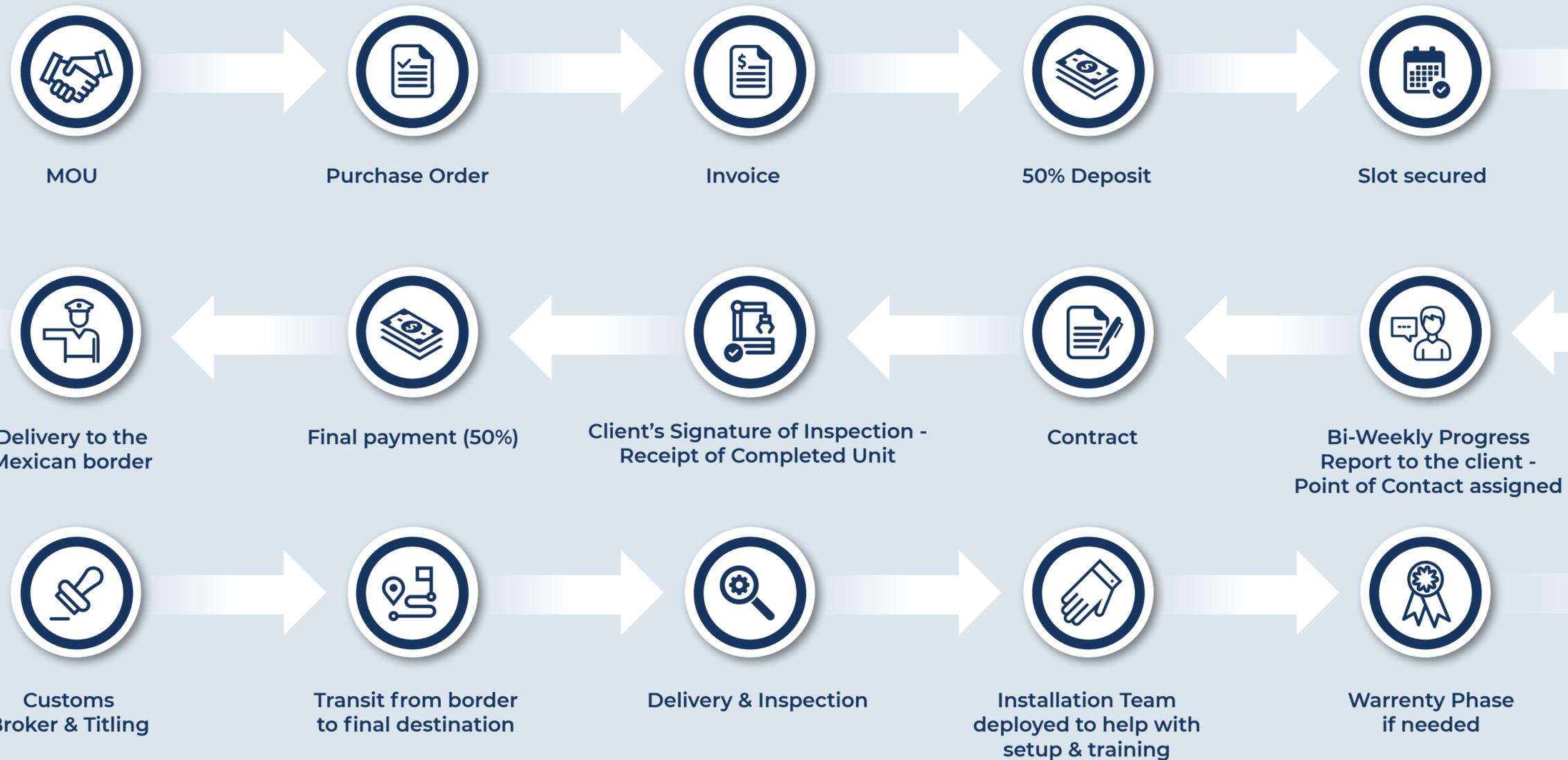
## The Exclusive Distributor

Elavo Supply is proud to partner with CT Defense to present the Mobile Medical Unit - a state-of-the-art, lifesaving emergency response vehicle. Elavo Supply has handpicked some of the top talents in their respective fields to form a winning team that you can depend on in times of need.



## Step by Step Path of Purchase.

When ordering a Mobile Medical Unit, the following steps will be followed.



## Mobile Command Center

In addition to the Covid-19 Pandemic Emergency Unit, CT Defense is proud to offer a Command Center Unit as well.

Designed for forward operations, the self-contained mobile operating base consists of two totally integrated state-of-the-art units designed to work in tandem for operations and communications aimed at remote deployment needs.

The *main unit* functions as a dormitory that includes 20 beds, 2 armories, 33 lockers, and more.

The *secondary* unit offers 5 shower stalls, 5 toilets, 5 wash basins and a full size industrial Kitchen to support the crew.

Thanks to their expansion technology and autonomy, these unique tactical vehicles are adaptable and flexible while providing a forward operations platform with accommodation for up to 20 personnel off the grid for up to 20 days or longer.

Watch a video of the Command Center here:  
<https://vimeo.com/414786347>





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**An immediate and effective response  
to the current pandemic and future crises.**

