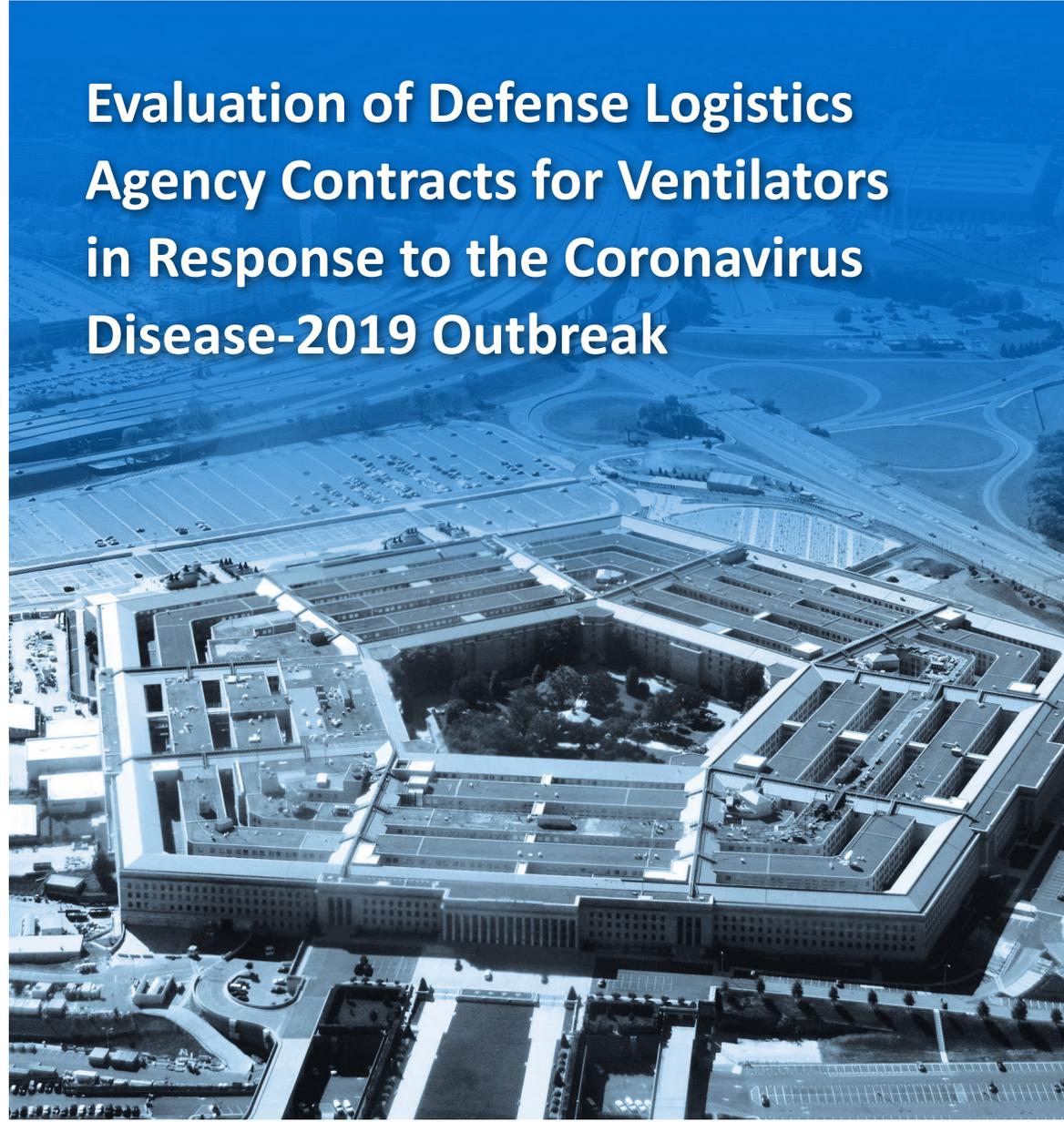




# INSPECTOR GENERAL

*U.S. Department of Defense*

DECEMBER 23, 2020



## Evaluation of Defense Logistics Agency Contracts for Ventilators in Response to the Coronavirus Disease-2019 Outbreak

INTEGRITY ★ INDEPENDENCE ★ EXCELLENCE





**INSPECTOR GENERAL  
DEPARTMENT OF DEFENSE  
4800 MARK CENTER DRIVE  
ALEXANDRIA, VIRGINIA 22350-1500**

December 23, 2020

**MEMORANDUM FOR DEFENSE LOGISTICS AGENCY PROGRAM EXECUTIVE OFFICER  
FOR CONTRACTING**

**SUBJECT: Evaluation of Defense Logistics Agency Contracts for Ventilators in Response  
to the Coronavirus Disease-2019 Outbreak (Report No. DODIG-2021-042)**

This final report provides the results of the DoD Office of Inspector General's evaluation. We considered management's comments on a discussion draft copy of this report when preparing the final report. We did not make recommendations; therefore, no management comments are required.

If you have any questions or would like to meet to discuss the evaluation, please contact [REDACTED]  
[REDACTED] We appreciate the cooperation and assistance received during the evaluation.

A handwritten signature in black ink, appearing to read "Randolph R. Stone", is positioned above the typed name.

Randolph R. Stone  
Assistant Inspector General for Evaluations  
Space, Intelligence, Engineering, and Oversight



# Introduction

## Objective

The objective of this evaluation was to determine whether the Defense Logistics Agency (DLA) properly contracted to acquire ventilators in response to the global coronavirus disease-2019 (COVID-19) pandemic, including how the DLA identified contract requirements and provided oversight of the time-phased delivery of ventilators.

To determine whether the DLA properly acquired ventilators through its contracts, we evaluated whether the DLA acquired sufficient numbers of ventilators to meet demand, whether the DLA obtained the ventilators in a timely manner, and whether the ventilators met DLA customers' expectations.

## Background

COVID-19 is a viral respiratory illness caused by a novel coronavirus. On January 31, 2020, the U.S. Secretary of Health and Human Services (HHS) declared a public health emergency for the United States, and on March 13, 2020, the President declared a national emergency.

According to the Centers for Disease Control and Prevention, all 50 states have reported cases of COVID-19. The virus can cause damage to the lungs, making it difficult to breathe and causing the body's oxygen levels to drop, which can result in death. A ventilator can be used to push air with increased levels of oxygen into the lungs of a patient. In a DoD press release on March 17, 2020, the Secretary of Defense stated,

As part of the President's whole-of-government approach to fighting the coronavirus pandemic, the Defense Department has agreed to provide medical supplies and capabilities to the Department of Health and Human Services to help combat further infections.

To provide the medical supplies, the DLA contacted six vendors with existing DLA contracts to determine the quantity and timeframe required for each vendor to deliver the ventilators. Four of the six vendors notified the DLA that they would be able to collectively deliver a total of 8,000 ventilators.

## ***Defense Logistics Agency***

The DLA is headquartered at Fort Belvoir, Virginia. According to a 2019 DLA Agency Financial Report to Congress, the DLA mission is to "Sustain Warfighter readiness and lethality by delivering proactive global logistics in peace and war." The DLA reports to the Office of the Under Secretary of Defense for Acquisition and Sustainment through the Assistant Secretary of Defense for Sustainment. As the nation's combat logistics support agency, the DLA is responsible for the DoD global supply chain, from acquiring raw materials through delivery of services and supplies to the DoD components. The components are the Army, Navy,

Air Force, and Marine Corps (hereafter referred to as the Services), other Federal Agencies, and public entities (hereafter referred to as customers). The DLA acquires and provides nearly all the consumable items the Services need to operate, including food, fuel and energy, uniforms, medical supplies, and construction material. The DLA provides support around the world to meet the Services' needs in times of peace, war and other customers during national emergencies.

DLA Troop Support is headquartered in Philadelphia, Pennsylvania. DLA Troop Support is the major DLA subordinate command responsible for managing food, clothing, medical, construction and equipment, and general and industrial supplies worldwide. DLA Troop Support manages the following DoD supply chains: subsistence, clothing and textile, construction and equipment, medical, and industrial hardware. Additionally, DLA Troop Support is responsible for the medical material supply chains, including critical care equipment, such as anesthesia systems, defibrillators, and ventilators to the Services and other customers.

### ***DLA Working Capital Fund***

The DLA maintains a working capital fund that it uses to place delivery orders for products and services. The DLA used its working capital fund to place delivery orders on existing contracts for ventilators. According to DLA contracting officials, the specific DLA working capital fund utilized for the ventilator acquisitions contained approximately \$500 million for the DLA to acquire equipment.

Authorized under Title 10, Section 2208, of the United States Code, a defense working capital fund is a type of revolving fund that is intended to operate as a self-supporting entity to fund business-like activities such as acquiring parts and supplies, equipment (ventilators), maintenance, transporting personnel, and research and development, for the DoD. Congress provides a direct initial appropriation to the fund. After the fund is established, the customer places orders through the DLA for the product or service offered by a DLA established vendor. The DLA acquires the product or service from the vendor with funds from the working capital fund. The DLA also signs a reimbursable agreement with the customer that is requesting the product or service. Upon receipt of the product or service, the customer (for example the Army) then reimburses the DLA's working capital fund with its own operation and maintenance funds appropriated for that purpose. The DLA paid for the ventilators with funds from the DLA working capital fund. The DLA's use of its working capital fund allowed the DLA to immediately place delivery orders on existing contracts.

### ***Indefinite Delivery Indefinite Quantity Contracts***

The DLA had pre-existing contracts in place that could be utilized for acquiring emergency medical equipment such as ventilators. Specifically, the DLA used its Indefinite Delivery/ Indefinite Quantity (ID/IQ) contracts for acquiring the ventilators. An ID/IQ contract is

a flexible contract that is negotiated with a vendor to acquire commercial off-the-shelf or standard military items and equipment that do not require research and development or modification.<sup>1</sup>

### **Four Ventilator Vendors**

The DLA contacted six vendors already on contract to determine how many ventilators they could deliver. Four of the six vendors notified the DLA that they would be able to collectively deliver a total of 8,000 ventilators. According to DLA Troop Support's Medical Division Chief, DLA decided to "lean forward" and acquire 8,000 ventilators as quickly as possible. The DLA eliminated two of the six vendors due to long lead times to deliver the ventilators.<sup>2</sup>

On March 26, 2020, the DLA executed delivery orders on five existing contracts to acquire 8,000 ventilators from four vendors. Specifically, the DLA placed delivery orders with the following vendors.

- Cardinal Health 200 Limited Liability Corporation (hereafter referred to as Cardinal Health) was founded in 1971 and is headquartered in Dublin, Ohio. According to its website, Cardinal Health is a global, integrated healthcare services and products company, providing customized solutions for hospitals, health systems, pharmacies, ambulatory surgery centers, clinical laboratories, and physician offices worldwide.<sup>3</sup> The DLA had one existing ID/IQ contract with Cardinal Health, contract number SPE2DV-17-D-0001, signed April 12, 2017. The DLA placed a delivery order on that contract for 500 ventilators.
- Combat Medical Systems, Limited Liability Corporation (hereafter referred to as Combat Medical) was founded in 2008 and is headquartered in Harrisburg, North Carolina. According to its website, Combat Medical's primary goal is to develop and deliver mission critical products that simplify tactical medicine from the point of injury through evacuation. The DLA had one existing ID/IQ contract with Combat Medical, contract number SPE2D0-14-D-0001, signed February 19, 2014. The DLA placed a delivery order on that contract for 2,500 ventilators.
- Hamilton Medical Incorporated (hereafter referred to as Hamilton Medical) was founded in 1983 and is headquartered in Reno, Nevada. According to its website, Hamilton Medical is an international corporation whose team consists of respiratory therapists that have been developing ventilation solutions that provide care for critically ill patients. The DLA had one existing ID/IQ contract with Hamilton Medical, contract number SPE2D1-19-D-0021, signed July 22, 2019. The DLA placed two delivery orders on that contract for a total of 2,500 ventilators.

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<sup>1</sup> According to Federal Acquisition Regulation (FAR) Subpart 16.5, in an ID/IQ contract, the government promises the vendor a certain minimum amount of purchases and the vendor agrees to provide the items ordered when they receive delivery orders from the government.

<sup>2</sup> The DLA also explored the possibility of procuring ventilators from Draeger Medical and GE Datex-Ohmeda, two other manufacturers with ID/IQ contracts with DLA. However, the DLA made no awards to these vendors due to the long lead times for delivery that the companies quoted. For example, the lead time for Draeger ventilators was 16 to 18 weeks and growing since Draeger already had orders from the U.S. Department of Veterans Affairs for 1,500 units and the German government for 10,000 units. At the time, DLA customers were expressing an urgent need for ventilators.

<sup>3</sup> Vyair Medical Incorporated is the manufacturer of ventilators for Cardinal Health.

- Zoll Medical Corporation (hereafter referred to as Zoll Medical) was founded in 1980 and is headquartered in Chelmsford, Massachusetts. According to its website, Zoll Medical develops and markets medical devices and software solutions that help clinicians, emergency medical services and fire professionals, and lay rescuers treat victims needing resuscitation and acute critical care. Specifically, Zoll Medical provides products for defibrillation and monitoring, circulation and cardiopulmonary resuscitation feedback, data management, therapeutic temperature management, and ventilation. The DLA had two existing ID/IQ contracts with Zoll Medical, contract number SPE2D1-17-D-0043, signed September 29, 2017, and SPE2D1-19-D-0011, signed January 14, 2019. The DLA placed two delivery orders on those contracts for a total of 2,500 ventilators.

# Defense Logistics Agency Ordered Ventilators in Anticipation of Customer Requests During the COVID-19 Pandemic

Beginning on March 26, 2020, the DLA used multiple existing ID/IQ contracts to place delivery orders for 8,000 ventilators in response to the global COVID-19 pandemic. The DLA took initiative to acquire these ventilators due to projected national shortages, prior to having customer requests for ventilators.<sup>4</sup> The DLA's actions were proactive and intended to avoid delivery delays due to a high demand for ventilators in the fight against the COVID-19 disease.

After placing delivery orders on the ID/IQ contracts using its working capital fund, the DLA received orders for a total of 5,839 ventilators from customers as early as April 10, 2020, including the HHS and at least 15 other Army, Navy, Combatant Command, and U.S. Department of Veterans Affairs (VA) customers. Upon receiving customer requests for ventilators, DLA contracting officers modified its delivery orders to ensure that orders were delivered directly to those customers. DLA contracting officers also provided consistent oversight of the delivery of the ventilators by monitoring shipments with the vendors, confirming delivery and quality assurance inspection by its customers, and then providing payment to the vendors.

By acquiring ventilators in anticipation of customer requests, the DLA eliminated the time it would take to issue new contracts, and thus shorten the customer's waiting period. Although one customer experienced initial delivery delays due to customer-requested changes to the order, the other 15 customers did not report significant delivery delays to the DLA from the dates approved in the orders. Furthermore, the DLA's procurement approach utilizing its working capital fund and established ID/IQ contracts enabled the DLA and its customers to receive delivery of 4,200 ventilators totaling \$43,971,536 to customers on schedule by August 2020, with no identified quality assurance concerns. As of April 21, 2020, an additional 1,639 ventilators were on order with scheduled deliveries from December 2020 through February 2021. DLA contracting officers canceled 1,300 of the remaining ventilators from the Combat Medical contract on July 15, 2020, and stated that July 31, 2020, would be the cutoff date for customers to place orders. As of September 17, 2020, the DLA did not have customers for the remaining 861 ordered ventilators and canceled the delivery orders on September 21, 2020.

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<sup>4</sup> Numerous organizations, such as "The Lancet" and "The New England Journal of Medicine," released articles in early 2020 projecting national shortages of ventilators required to care for critically ill patients.

## DLA Ordered 8,000 Ventilators in Anticipation of Customer Needs

The DLA used multiple existing ID/IQ contracts and its existing working capital fund to place delivery orders within FAR guidelines contained in Subpart 16.5 “Indefinite Delivery Contracts” for 8,000 ventilators in response to the global COVID-19 pandemic. DLA Troop Support contract personnel took steps to acquire these ventilators due to projected national shortages, without having existing customer requests for ventilators. The DLA’s actions were proactive and intended to avoid delivery delays due to a projected high demand for ventilators in the fight against the COVID-19 disease.<sup>5</sup>

### ***DLA Issued Delivery Orders to Four Existing Vendors***

The DLA’s use of existing ID/IQ contracts and existing working capital fund eliminated the need to request bids and proposals from multiple vendors, conduct source selection boards, or negotiate prices, which would have delayed the delivery of the needed equipment. We reviewed the delivery orders that the DLA executed with four vendors for four different ventilators.

The table identifies the details, including the vendor, ventilator model, and total cost, of delivery orders that the DLA executed on the ID/IQ contracts.

*Table. DLA Ventilator Vendors and Delivery Orders*

Vendor	Delivery Order Number	Date of Order	Ventilator Model	Number of Ventilators Ordered	Ventilator Cost Per Unit	Total Delivery Order Cost
<b>Cardinal Health</b>	SPE2DV-17-D-8000	4/5/2020	500 LTV-2	500	\$11,342	\$5,871,030
<b>Combat Medical</b>	SPE2D1-20-F-Z004	3/27/2020	SAVe II+	2,500	\$6,495	\$16,237,150
<b>Hamilton Medical</b>	SPE2D1-20-F-Z003	3/26/2020	Hamilton-T1	1,312	\$16,487	\$21,631,587
<b>Hamilton Medical</b>	SPE2D1-20-F-Z007	4/21/2020	Hamilton-T1	1,188	\$16,487	\$19,587,138
<b>Hamilton Total Number of Ventilators Ordered and Cost</b>				2,500		\$41,218,725
<b>Zoll Medical</b>	SPE2D1-17-D-0043	3/26/2020	EMV+ portable	2,100	\$12,192	\$25,602,549

<sup>5</sup> FAR 4.803(a) “Acquisition Planning Information;” FAR 4.803(b) “Contract and Modifications Documentation;” FAR 52.249-8 “Supplies;” FAR 52.212-4 “Commercial Items;” FAR 52.216-25 “Letter Contracts;” FAR 43.103 “Equitable Adjustments;” FAR 43.105(a) “Fund Availability;” FAR 4.803(b)(13) “Stop Orders;” and FAR 4.803(b)(15) “Quality Assurance Records.”

Table. DLA Ventilator Vendors and Delivery Orders (cont'd)

Vendor	Delivery Order Number	Date of Order	Ventilator Model	Number of Ventilators Ordered	Ventilator Cost Per Unit	Total Delivery Order Cost
Zoll Medical	SPE2D1-19-D-0011	3/26/2020	EMV+ portable	400	\$12,260	\$4,903,920
<b>Zoll Medical Total Number of Ventilators Ordered and Cost</b>				2,500		\$30,506,469
<b>Total Number of Ventilators Ordered and Total Cost</b>				<b>8,000</b>		

Source: DLA Troop Support.

Each of the four vendors produces its own type of ventilator. Our review was limited to the contracting efforts of the DLA, not the specific types of ventilators ordered or the capabilities. See the Appendix for a description of each ventilator the DLA ordered from the four vendors.

To determine whether the DLA contracting officers complied with the FAR, we reviewed selected elements of the contract administration file such as the acquisition planning information, contract modifications, and delivery orders issued under the contract. In addition, to determine whether the DLA contracting officers complied with appointment and training requirements, we reviewed contract officer certificates of appointment, academic transcripts of training completion, training records from the DLA learning management system, and Defense Acquisition Workforce and Improvement Act career field certification documentation.<sup>6</sup>

For this contracting effort, the DLA assigned two contracting officers, one contracting officer for the Combat Medical, Hamilton Medical and Zoll Medical contracts, and another contracting officer for the Cardinal Health contract. We reviewed both individuals' appointment and training records. We determined both were officially appointed and met the training and certification requirements in accordance with the FAR elements listed above, as well as DoD policy.<sup>7</sup>

<sup>6</sup> FAR 1.603-3, "Appointment," states contracting officers shall be appointed in writing. The Certificate of Appointment states any limitations on the contracting officer's scope of authority to be exercised. Appointing officials shall maintain files containing copies of all appointments that have not been terminated. FAR 1.601, "General," states contracting officers are allowed to negotiate on behalf of the Government. As the Government's agent, contracting officers may execute, administer, or terminate a contract.

<sup>7</sup> DoD Instruction 5000.66 "Defense Acquisition Workforce Education, Training, Experience, and Career Development Program," July 27, 2017 (Incorporating Change 2, Effective September 13, 2019), requires that members of the acquisition workforce complete 80 hours of continuous learning every 2 years.

## ***DLA's Contracting Actions Were Proactive***

Although the DLA would not normally place delivery orders without identified customer requests, in this case the DLA's actions were proactive and intended to avoid delivery delays due to a high demand for ventilators. Under normal circumstances, customers would request orders from the DLA, which would then award a contract or place delivery orders on existing contracts for equipment. However, as a result of the global COVID-19 pandemic, which triggered a world-wide demand for ventilators, medical supplies, and other medical equipment, DLA Troop Support placed delivery orders for 8,000 ventilators prior to customer requests. The DLA contracting officers executed the contract actions to reduce the wait time for the customers for these critical pieces of medical equipment.

## **DLA Redirected Deliveries to Meet Customer Requests and Provided Oversight of Deliveries**

On April 10, 2020, the DLA began to receive requests for ventilators from customers, including HHS and 16 other Service, Combatant Command, and VA customers. Upon receiving customer requests for ventilators, the DLA modified its delivery orders to ensure that delivery of the ventilators to the customer's location of choice. DLA contracting officers also provided consistent oversight of the delivery of the ventilators by monitoring shipments with the vendors, confirming delivery and quality assurance inspection by its customers, and then providing payment to the vendors.

## ***DLA Provided Oversight of the Delivery of Ventilators***

After issuing the delivery orders and agreeing to the vendors' delivery schedules, DLA contracting officers continued to maintain oversight of deliveries to include monitoring actual deliveries, delays, quality assurance concerns, and payment. According to DLA officials, the DLA does not require any specific quality assurance checks or formal progress reports for contract orders that are placed for supplies such as the ID/IQ contracts for ventilators. Instead, DLA contracting officers monitored the shipments via e-mails with the vendors and the customers. DLA contracting officers also confirmed delivery with the customers and verified that the customers were satisfied with the quality of the product upon receipt. Once the customers confirmed receipt and acceptance of the units, DLA contracting officers documented that information in the contract file and the vendors requested payment. We reviewed e-mails that DLA contracting officers maintained verifying shipment and delivery of the ventilators.

## DLA's Proactive Order Management Accelerated Ventilator Deliveries

By procuring ventilators in anticipation of customer requests, the DLA reduced the lead time to issue new contracts, and thus shortened the customer's waiting period. The DLA's contracting approach enabled the DLA to ensure the delivery of 4,200 ventilators by August 2020, totaling \$43,971,536 to customers, and verify that the customers were satisfied with the quality of the product upon receipt. Although one customer experienced initial delivery delays due to customer-requested changes to the order, the other 15 customers have not reported significant delivery delays from the dates approved in the orders.

An additional 1,639 ventilators are on order with scheduled deliveries from December 2020 through February 2021. DLA contracting officers canceled 1,300 of the remaining ventilators from one contract on July 15, 2020, and stated that July 31, 2020, would be the cutoff date for customers to place orders. As of September 17, 2020, the DLA did not have customers for the remaining 861 ordered ventilators and canceled the delivery orders on September 21, 2020.

### ***One Customer Had Ventilator Delivery Delays***

In accordance with the original delivery order schedules, three of the four ventilator vendors delivered the ventilators to DLA customers on schedule. However, one order was initially delayed by over three months. Specifically, on March 27, 2020, the DLA ordered 2,500 SAVE II ventilator units from Combat Medical. The original order specified Combat Medical would deliver 10 units per week for 10 weeks beginning 2 weeks after receipt of the order. From 11 to 16 weeks, Combat Medical was required to increase production to deliver 20 units per week; and after 17 weeks deliver the remaining quantity up to 2,500 ventilators, on or about July 31, 2020.

On April 16, 2020, DLA customer HHS requested 1,200 of the 2,500 ventilators ordered from Combat Medical. According to the original order dates, deliveries should have been able to start within two weeks. However, at the time of order, the manufacturer of the SAVE II ventilators was awaiting approval by the U.S. Food and Drug Administration for the ventilators to be used with COVID-19 patients.<sup>8</sup> On April 24, 2020, the U.S. Food and Drug Administration approved the SAVE II ventilator for use with COVID-19 patients and added the SAVE II ventilator to the COVID-19 Emergency Use Authorization. Deliveries should have been able to begin within two weeks.<sup>9</sup> However, HHS subsequently requested delivery of an upgraded ventilator model instead of the ventilator model that was originally ordered by the DLA. According to DLA Troop Support Chief of Capital Equipment Division, the upgraded ventilator model would be more effective at treating COVID-19 patients.

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<sup>8</sup> AutoMedX Inc. is the manufacturer of the SAVE II ventilator.

<sup>9</sup> The U.S. Food and Drug Administration Emergency Use Authorization authority allows the Food and Drug Administration to help strengthen the nation's public health protections by facilitating the availability and use of medical countermeasures during public health emergencies.

Additionally, HHS requested more changes to the upgraded ventilator model that resulted in further delays in ventilator delivery. Therefore, on June 4, 2020, DLA contracting officers modified the order to reflect the HHS requested upgrades. Despite the early delays in delivery, according to HHS personnel, all 1,200 ventilators were delivered to HHS by July 31, 2020.

### ***DLA Received Delivery of 4,200 Ventilators and Canceled Unpurchased Orders***

By placing orders for ventilators in anticipation of customer requests, as well as using its working capital fund and its ID/IQ contracts, DLA customers received delivery of 4,200 of 8,000 ventilators by August 2020. Furthermore, DLA customers received the ventilators and verified the quality met their needs. Lastly, on July 15, 2020, the DLA canceled 1,300 ventilator orders due to a lack of ventilator requests from its customers. By canceling the ventilator orders, the DLA was able to avoid unnecessary spending. As of September 17, 2020, ventilator deliveries, pending orders, and cancellations, were as follows.

- **Cardinal Health.** Cardinal Health delivered all 500 ventilators on schedule by August 17, 2020.
- **Combat Medical.** Combat Medical delivered 1,200 of 2,500 ventilators that were initially delayed, but later delivered in accordance with the modified schedule by July 31, 2020. The DLA issued a “termination of convenience” canceling the order for the remaining 1,300 ventilators on July 15, 2020.<sup>10</sup>
- **Hamilton Medical.** Hamilton Medical is scheduled to deliver 1,639 of the 2,500 ventilators to multiple DLA customers from December 2020 through February 2021. As of December 8, 2020, Hamilton Medical had delivered 98 ventilators. The DLA anticipated delivery of 280 ventilators upon receipt of a sensor required for carbon dioxide monitoring in the Model T1 ventilators in December 2020, and the remaining 1,261 ventilators in January and February 2021. The remaining 861 ventilators were canceled on September 21, 2020.
- **Zoll Medical.** Zoll Medical delivered all 2,500 ventilators on schedule by July 19, 2020.

## **Scope and Methodology**

We conducted this evaluation from May 2020 through December 2020 in accordance with the “Quality Standards for Inspection and Evaluation,” published in January 2012 by the Council of Inspectors General on Integrity and Efficiency. Those standards require that we adequately plan the evaluation to ensure that objectives are met. We also use the standards to perform the evaluation to obtain sufficient, competent, and relevant evidence to support the findings, conclusions, and recommendations. We believe that the evidence obtained was sufficient, competent, and relevant to lead a reasonable person to sustain the conclusions.

<sup>10</sup> FAR 52.249-2, “Termination for Convenience of the Government (Fixed Prices)” allows the Government to terminate performance of work in whole or from time to time if the contracting officer determines that a termination is in the Government’s interest.

The DLA awarded delivery orders on existing ID/IQ contracts with four vendors (Cardinal Health, Combat Medical, Hamilton Medical, and Zoll Medical) to support the high demand for ventilators. We received and reviewed contract documents for all four vendors with delivery orders for ventilators. We reviewed contract award documentation as part of the contract document review. However, we did not review how DLA officials awarded the initial medical contracts because the DLA issued delivery orders on pre-existing contracts. We also conducted telephone interviews with DLA Troop Support Medical Operations personnel to answer questions and obtain the documentation discussed in the paragraph below.

To determine whether the DLA adequately contracted to acquire ventilators in response to the COVID-19 pandemic, including how the DLA identified customer requirements and provided oversight of the delivery, we reviewed selected sections of the contract administration file for compliance in accordance with the FAR. Specifically, we reviewed the acquisition planning information, contract modifications, and delivery orders issued under the contract. To assess whether DLA contracting personnel were officially appointed and trained in accordance with the FAR and DoD Instruction 5000.66, we reviewed contract officer warrants, unofficial academic transcripts of training completion at the Defense Acquisition University, training records from the DLA learning management system, and Defense Acquisition Workforce and Improvement Act career field certification documentation.

## Appendix

### Ventilators Ordered in DLA's Response to COVID-19

According to its website, the Cardinal Health LTV2 Series Ventilator (unit price \$11,342.47) has the following features.

- Turbine technology eliminates the need for a high-pressure air source
- Enhanced patient comfort and care with flow trigger and internal Positive End Expiratory Pressure compensation
- Optimization trial settings
- Versatility with highly customizable settings to support patient success
- Hot swappable battery
- Data output capabilities
- Non-invasive Positive-Pressure Ventilation enhancements
- Sigh breath for more natural breathing
- Improved power capabilities
- Institutional use and for intra-hospital transport
- Easy to read displays
- Comprehensive monitoring
- Supports invasive and non-invasive applications



Figure 1. LTV2 Series Ventilator  
Source: Cardinal Health.

According to its website, the Combat Medical SAVe II Series Ventilator (unit price \$6,494.86) has the following features.

- Hands-free automated ventilation
- Prevents hyperventilation
- Smallest: compressor driven ventilator at 2.7 pounds
- Uses height chart to dial in targeted tidal volume
- Simplified training and maintenance requirements
- Hands-free bagging during evacuation
- Height presets deliver air recommended 6 milliliters/kilogram of Ideal Body Weight



Figure 2. SAVe II Ventilator  
Source: Combat Medical.

- Accepts supplemental oxygen with up to 100 percent Fraction of Inspired Oxygen
- Compressed oxygen not required
- Detects blockage and disconnects
- Fail-safe mechanisms and visual/audible alarms
- Durable, lightweight, compact design
- Runs up to 10 hours per charge (runs 8.5 hours at normal settings or 10 hours at 500 milliliters and 10 beats per minute) and unlimited time with Alternating Current power
- Powered by rechargeable lithium ion battery or electrical outlet

According to its website, the Hamilton Medical-T1 Ventilator (unit price \$16,487.49) has the following features.

- Approved for use in ambulances, helicopters and airplanes
- Adult, pediatric, and neonatal ventilation
- Over 9 hours of battery operating time
- Non-invasive ventilation and integrated high flow oxygen



Figure 3. T1 Ventilator  
Source: Hamilton Medical.

According to its website, the Zoll Medical EMV+ Ventilator (unit price \$12,259.80) has the following features.

- Military Airworthiness Release certified
- Alternating Current mode; Synchronized Intermittent Mandatory Ventilation and Continuous Positive Airway Pressure (Noninvasive Positive Pressure Ventilation/ Positive Pressure Ventilation) modes with pressure support
- 9.7 pounds (4.4 kilograms), rugged, and suitable for all weather conditions
- 10-hour battery run-time; recharges in 2 hours to 90 percent
- Smart Help technology for alarm resolution
- Compressor-driven, does not require oxygen to operate
- Fraction of Inspired Oxygen 21-100 percent, can be used with high-and low-flow oxygen, 1/3 less oxygen consumption compared to pneumatic devices



Figure 4. EMV+ Ventilator  
Source: Hamilton Medical.

# Acronyms and Abbreviations

**DLA** Defense Logistics Agency

**FAR** Federal Acquisition Regulations

**HHS** U.S. Department of Health and Human Services

**ID/IQ** Indefinite Delivery/Indefinite Quantity

**VA** U.S. Department of Veterans Affairs

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