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SCHOOL OF BUSINESS
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Executive Summary

It’s been nearly eight months since COVID-19 hit, and the Center for Government Contracting has followed the federal contracting data on the response. This report builds on previous Center analyses [Link] and provides an in-depth look at government contracting community actions since March. It is organized into four parts: (1) the federal response; (2) industry impact; (3) contract tools and authorities; and (4) an overview of Operation Warp Speed and supply chains.

By the end of September 2020, federal contracts in support of the COVID-19 response exceeded $40 billion all-together. Of that amount, $34.3 billion was publicly available for analysis, shown in Figure 1. The remainder was taken from aggregate figures provided by the Department of Defense (DoD) but not publicly available due to a standard 90-day lag in reporting to the Federal Procurement Data System (FPDS).

The Center assigned COVID-19 obligations across 17 categories. The largest area of spending is $8.1 billion for medical research and development, particularly in the area of vaccine prototyping. Including figures provided by DoD, Other Transactions contracts for medical R&D accounted for a total of $9 billion, greater then all Other Transaction contracts in 2019 ($7.7 billion). The second largest spending area was personal protective equipment (PPE) at $3.9 billion, of which 9 percent originated in China.

Figure 1. Federal COVID-19 Contract Obligations ($B)
As of Sep. 28, 2020*

<table>
<thead>
<tr>
<th>Category</th>
<th>Billions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical R&amp;D</td>
<td>$3.12</td>
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<tr>
<td>PPE</td>
<td>$1.14</td>
</tr>
<tr>
<td>Ventilators</td>
<td>$0.95</td>
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<tr>
<td>Food</td>
<td>$0.18</td>
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<tr>
<td>IT/Remote</td>
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<tr>
<td>Other</td>
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<tr>
<td>Tests/panels</td>
<td>$0.56</td>
</tr>
<tr>
<td>Medical Equip/Supplies</td>
<td>$0.49</td>
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<td>Analysis</td>
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<tr>
<td>Construction</td>
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<tr>
<td>Medical Services</td>
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<tr>
<td>Lab Equip/Supplies</td>
<td>$0.21</td>
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<tr>
<td>Facilities</td>
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<tr>
<td>Transportation</td>
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<tr>
<td>Janitorial/Security</td>
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</tr>
<tr>
<td>Beds</td>
<td>$0.02</td>
</tr>
<tr>
<td>Cleaning Products</td>
<td>$0.02</td>
</tr>
</tbody>
</table>

COVID-19 has had a mixed impact on aerospace and defense (A&D) industry’s financial health. Companies with significant commercial aerospace business have seen substantial drops in revenue while more pure-play defense companies did not see major financial impacts, and many have been able to grow revenue. All A&D companies, however, experienced some level of performance issues due to temporary facility closures and other COVID-19 impacts. Modest program delays are expected, but the full impacts to cost and schedule on government programs are not yet known.

The federal government also leveraged its contracting tools to stabilize its industrial base and assure progress in critical missions. For example, the DoD estimated that idle labor costs eligible for reimbursement under Section 3610 of the CARES Act could reach $9 billion, with equitable adjustments costing another $4 billion. Overall, DoD is seeking roughly $13 billion to address contractor costs of COVID-19. None of these funds have been appropriated, however. Accelerated progress payments, which do not draw on appropriations, are likely to reach $3 billion. These numbers reported by DoD represent about two-thirds of total federal contracting.

Emergency flexibilities in the Federal Acquisition Regulation also sped up contracting. $12 billion invoked FAR 6.302, allowing officials to contract without full and open competition. $1.7 billion used emergency commercial item procedures found in FAR 12.102(f). More than 300 contracts reported utilizing undefinitized contract actions (UCAs) to start work before contracts are finalized.

Health and Human Services used the Defense Production Act (DPA) to procure more than 187,000 ventilators. Overall, the Center identified DPA-rated COVID-19 contracts with obligated values of $3.6 billion. The Center also identified over $1 billion in DPA Title III projects underway, $477 million directly supporting the COVID-19 public health response and an additional $687 million supporting the defense industrial base, particularly in aircraft propulsion and shipbuilding.

At the forefront of the current COVID-19 response, Operation Warp Speed has brought together officials from HHS, DoD, and other agencies in order to accelerate vaccine development and distribution. The objective is to produce and deliver 300 million doses of a safe and effective vaccine by early 2021.

COVID-19 has also exposed the vulnerabilities of supply chains in key public health and national security areas. While there is broad consensus on the need to re-shore domestic manufacturing capacity in these areas, there are disagreements on how best to do this.

Overall, COVID-19 has made it clear the nation must increase our preparedness for and build resilience into our supply chains not only to respond to pandemics, but to national security emergencies as well.
Part I: Federal Response

Total federal obligations for the COVID-19 response may exceed $40 billion through September 2020. More than 50 agencies reported COVID-19 obligations, with Health and Human Services obligating the most at $13.7 billion, followed by the Department of Defense at $8.4 billion. The totals are summarized in Figure 2.

Figure 2. Agency COVID-19 Obligations ($B)

Contracting in response to the pandemic started out strong, growing to a high of $8.6 billion in the month of April. There is often a delay in data reporting, particularly for DoD with a standard 90-day lag. A time sequence of obligatory data is shown in Figure 3. For example, as of August 4 there was just $2.1 billion reported for the month of June. Data extracted at the end of September saw monthly obligations for June jump to $7.3 billion. Nevertheless, there appears to be a real downward trend in contracting for COVID-19, particularly in HHS which dropped from $2.2 billion in June to just $387 million in July. DoD filled the gap by obligating nearly $4.3 billion obligated on behalf of HHS for research and development into vaccines, therapeutics, and scaling production.

Figure 3. Monthly COVID-19 Obligations ($B)

Change in monthly federal obligations for the COVID-19 response by date of data pull from FPDS shown in blue. Separately reported DoD Other Transactions data pulled on Oct. 26 shown in orange.

Contract Obligations

While government contracts provide more than $500 billion in annual spending, consumer spending in 2019 stood above $13 trillion. For many companies, however, government business proved a source of stability. Data from USA Spending suggests that new contract obligations accelerated in the first two months after COVID-19.¹ For each month between November 2019 and February 2020, total obligations did not stray further than few percent from $50 billion. In March 2020, obligations reached $78 billion, a surge of more than 50 percent.

The surge in obligations can be broken down into three sources:

1. The medical response supporting COVID-19
2. Agencies bringing planned contracts forward to bolster industry financials
3. Natural rhythms of government contracting, such as surges at the end of the fiscal year

The Center constructed a simple model to estimate how much of the change in observed federal obligations can

¹ USA Spending data and this analysis excludes DoD Other Transactions obligations reported separately.
be attributed to each of the three sources. The model creates a baseline estimate for what federal obligations would have been if COVID-19 never happened.

**Model:** Log-linear multiple regression.

**Timeframe:** October 2009 through February 2020.

**Dependent Variable:** Total Federal Contract Obligations (FY20$B).

**Independent Variable #1:** Total Federal Discretionary Budget Requests (FY20$B).

**Independent Variables #2-12:** Dummy variables for each month January through November.

In Figure 4, the predicted values of the model are compared to the observed values. The model estimates that obligations in March tend to be about 12 percent higher than average, controlling for budget size, while September surges 94 percent. The results must be taken with a grain of salt because the model is simple and the data are noisy, but it provides some indication as to magnitude.

**Figure 4. All Federal Contracts, Impact of COVID-19**

Monthly Obligations (FY20$B)

Actual obligations in FY20 $B per month (blue) compared to model predictions had COVID-19 never occurred (orange). In March 2020, actual obligations reached $78 billion compared to model prediction of $56 billion.

Figure 4 extends actuals and predictions through June 2020 to show the impact of COVID-19. Between March and April 2020, actual obligations stood $41 billion higher than the model estimates. During those two months, the Center identified $12 billion resulting from COVID-19 in the National Interest Area field. While these numbers are rough, it indicates that government agencies accelerated perhaps **$28 billion** in contract obligations to support industry. As a cross-check, the Air Force reported $3.9 billion in accelerated contracts due to COVID-19. [Link] With Air Force obligating 12 percent of the federal total in March and April, the total could exceed $32 billion if all agencies accelerated contracts proportionally.

Data on the following months flip the narrative. COVID-19 response obligations remained robust at $6.6 billion and $6.9 billion in May and June 2020, respectively. Netting that out from the model prediction, actual obligations not in response to COVID-19 fell below predictions by $2.7 billion in May and $9 billion in June. The reversal may indicate agencies running out of planned contracts to pull forward. Said differently, COVID-19 response contracts provided a persistent surge in obligations totaling $26 billion through June 2020. There was another source of contract surge, where agencies accelerated planned contracts by $28 billion to increase industry’s financials over March and April. Yet without an indefinite backlog of planned contracts, May and June experienced a combined slump of perhaps **$12 billion.** The figures are summarized in Table 1. Remember, these are rough top-down estimates. Model errors can be fairly large, but probably not large enough to change the direction of the observations.

**Table 1. Estimated Contract Acceleration or Deceleration**

<table>
<thead>
<tr>
<th>Total Federal Obligations, $B</th>
<th>A. Actuals $B</th>
<th>B. Predicted $B</th>
<th>C. Delta (A-B)</th>
<th>D. Actual Covid-19 $B</th>
<th>E. Acceleration (C-D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mar-20</td>
<td>$77.9</td>
<td>$60.8</td>
<td>$17.1</td>
<td>$3.8</td>
<td>$18.1</td>
</tr>
<tr>
<td>Apr-20</td>
<td>$61.9</td>
<td>$42.7</td>
<td>$19.1</td>
<td>$8.6</td>
<td>$10.5</td>
</tr>
<tr>
<td>May-20</td>
<td>$47.6</td>
<td>$43.8</td>
<td>$3.9</td>
<td>$6.6</td>
<td>-$2.7</td>
</tr>
<tr>
<td>Jun-20</td>
<td>$49.4</td>
<td>$51.5</td>
<td>-$2.1</td>
<td>$6.9</td>
<td>-$9.0</td>
</tr>
</tbody>
</table>

The acceleration or deceleration of contract obligations for planned federal work can be inferred by comparing actual obligations to prediction and netting out the actual dollars that went to the COVID-19 response.
What the Government Bought

(1) As illustrated in Figure 1 [see page 1], the largest category of federal COVID-19 spending is research and development with $6 billion going toward more than 450 recipients including 48 universities. Nearly half of R&D obligations went to the top five recipients. Janssen [Link] and Moderna [Link] are working on vaccines. Leidos Biomedical Research perform studies of patients and running trials for therapeutics. [Link] The government-owned contractor-operated Argonne Labs is working on vaccines, therapeutics, and tests [Link], while Emergent Manufacturing in Baltimore is building capacity for scaling vaccine production once discovered [Link]. This analysis of R&D does not include another $7.6 billion or more in separately reported DoD Other Transactions contracts for COVID-19. An analysis of those contracts starts on page 13.

Roughly 32 percent of R&D activities went toward small businesses. Interestingly, more than two-thirds of small business R&D went to just two companies. First, $970 million to Moderna which saw third quarter revenues jump from $17 million to $158 million between 2019 and 2020. [Link] The Small Business Administration’s size for pharmaceutical companies is based on whether it has more or less than 1,250 employees. [Link] Moderna had 820 employees as of December 2019, [Link] and has done some sizable business with HHS before, receiving $117 million between 2016 and 2017 for a Zika virus vaccine. [Link] Taking more scrutiny is a pair of contracts to Richmond-based Phlow Corp. for generic medicines and pharmaceutical ingredients. [Link] Phlow Corp. received $360 million in obligations (with $10 million of that already paid out) despite only having an estimated $1.5 million in annual revenues and 25 employees. [Link]

(2) The second largest category was Personal protective equipment (PPE) at $3.9 billion. The largest amount of spending is for N95 masks ($760 million) but also includes gloves ($126 million), coveralls ($29 million), and powered air-purifying respirators (PAPRs, $417 million). Nearly 650 firms received funds for PPE with the top three accounting for 40 percent, which represents a wider distribution than in June when the top three took in more than 90 percent of spending.

Of all PPE purchased for the COVID-19 response, 35.9 percent was manufactured outside the United States. $383 million of PPE originated in China (9.7 percent) due to a lack of domestic availability. A full 15 percent of PPE originated in Mexico, with the largest supplier by far being Parkdale Advanced Materials with $532 million sources from the country. The only other significant foreign source of PPE was Honduras at $328 million (8.4 percent), almost all of which was sourced by Hanesbrands Inc.

(3) The third largest category of spending is for ventilators at nearly $3.3 billion with the top five recipients taking in more than three-quarters of the dollars. Major players include Philips, Hamilton Medical, General Motors, Datex-Ohmeda, and Vyair Medical. Nearly all ventilators were sourced in the United States and used an exception to full an open competition: 83 percent used urgency procedures under

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2 Sixty-seven companies sold PPE to the government originating in China, the largest being 3M with $105 million.
FAR 6.302-2, another 13 percent skipped competitive procedures due to only one source.

(4) **Food** is the fourth largest category at $2.7 billion, led by the Department of Agriculture. Food was broadly distributed across suppliers and across the country, including $256 million destined for Puerto Rico.

(5) **Information Technology** is the fifth largest category at $2.6 billion. The category includes IT supporting health services as well as teleworking more generally. Nearly half of the awards went to small businesses, and unlike ventilators 95 percent of IT was competed. Veterans Affairs was the biggest user of IT services, contributing more than half of all dollars to the category.

(6) $2.3 billion in obligations were placed into the “Other” category (7.8 percent of the total). It included an assortment of purchases like office supplies, hardware tools, language services, and so forth. The Small Business Administration, for example, obligated $80 million for legal review of loan applications. The DoD had $659 million in other spending providing funds to over one thousand companies. 60 percent of that went to the aircraft and engine parts manufacturing. The biggest element of that is $354 million to General Electric in support the F110 engine industrial base. By the end of October, the Air Force reported that its Acquisition COVID-19 Taskforce has infused $1.1 billion into the propulsion industry. [Link] Some of these obligations may correspond to Title III projects of the Defense Production Act, which used CARES Act funding, further discussed on page 16. Another example in the “other” category is HHS obligating more than $315 million on marketing and publishers. For perspective, that’s about one-one hundredth of what pharmaceutical companies spend on marketing each year. [Link]

(7) The next largest category is **tests, panels and screening services** ($1.9 billion). $380 million of that invoked FAR 6.302-1(c) brand name description, almost all of which went on one award to Remel Inc. from Lenexa, Kansas. [Link] More than 100 companies benefitted from urgent FAR 6.302-2 procedures to bypass competition, representing more than 60 percent of total obligations.

(8) **Medical equipment and supplies** came in seventh at $1.7 billion. The category includes thermometers, drugs, deliberators, plasma, patient monitoring systems, and so forth. Only 2 percent of the products originated in China and another 2 percent from Mexico. McKesson Medical-Surgical is the largest supplier at 16 percent.

(9) Nearly $1.6 billion went to **facilities and construction**. Roughly half went to Texas and New York, with Texas A&M University picking up more than $264 million for construction of a vaccine manufacturing facility. [Link] (10) $1 billion went to analysis, of which three-quarters went to loan recommendation services for the Small Business Administration. (11) **Medical services** had $818 million obligated for medical staff, therapy, emergency response services, and patient care. $737 million went to (12) **lab equipment and supplies**, $632 million to (13) **transportation and lodging**, and $67 million to (15) **hospital beds**. Another interesting category of spending is $8.6 million for robotic disinfection services from Tru-D, Xenex, and Geo-Med. These costs were categorized as part of the $244 million spent on (14) **janitorial and security** services.

The smallest category of COVID-19 spending was (16) **cleaning products** at $64 million (0.2 percent). Interestingly, cleaning products were the largest category by number of transactions, accounting for more than one-quarter of all transactions. The average obligation was less than $4,000, an order of magnitude smaller than any other category. More than half of the transactions were awarded through a blanket purchase agreement, which takes advantage of micro-purchase and simplified acquisition procedures. [Link] Another quarter added task orders to existing indefinite delivery contracts. [Link] The most common type of cleaning product bought was hand sanitizer ($44 million), and there was more than a million obligated to each of soap, Clorox, and towels.

$1.9 billion has been **de-obligated** from contracts, roughly half of that coming from HHS. Only 9 percent
of de-obligations resulted from terminations for convenience. The government de-obligated one in six dollars from ventilators ($633 million), one in six dollars from medical equipment/supplies ($276 million), and one in eleven dollars from PPE ($372 million). Hamilton Medical alone had $543 million of ventilators terminated because, by August, HHS determined ventilators to be in adequate supply. [Link]

In a slightly more controversial case, a $96 million contract for PAPRs was de-obligated. The White House ordered PAPRs to New York medical workers from Immediate Response Technologies—a foreign-owned company based in Maryland—in a no-bid deal that required delivery by July 31. The contract was cancelled on April 3, just four days after it was signed. [Link]
Part II: Industry Impacts

COVID-19 has had a mixed impact on the A&D industry’s financial health, and while financials for key companies have improved in the third quarter, disruptions continue to be a concern. Overall, companies with significant commercial aerospace business have seen substantial drops in revenue while more pure-play defense companies did not see major financial impacts, and many have been able to grow revenue. All A&D companies, however, were not immune to performance issues due to temporary facility closures and other COVID-19 impacts. Impacts to cost and schedule on government programs are not yet known.

The Macro Environment

COVID-19 provided a shock to the United States economy, with real Gross Domestic Product (GDP) falling 9 percent between the first and second quarters of 2020. It shattered quarterly drops from the post-WWII era of 2.6 percent and 2.2 percent during the recessions in 1958 and 2008, respectively. The 1958 recession was in part brought on by the H2N2 Asian Flu pandemic, [Link] and saw a quick recovery the next quarter. The 2008 financial crisis was more extended, taking over two years for GDP to recover its highs.

Third quarter real GDP figures show something of a “v-shaped” rebound from COVID-19, more similar to 1958 than 2008. Third quarter real GDP grew 7.4 percent, clawing back three-quarters of what was lost. [Link] Similarly, total nonfarm employment regained more than half of the 22 million jobs lost between April and September. [Link] Despite the encouraging figures, several industries face a “u-shaped” recovery due to the shift in consumption and investment behavior. Upticks in new COVID-19 cases have also led some European nations to start a second round of shutdowns. [Link] Challenges can be expected to persist until a safe vaccine becomes widely available.

Aerospace & Defense Financial Impact

Government contractors were not immune to the economic disruption brought on by COVID-19. There are more than 50,000 contractors doing business directly with the Department of Defense, and roughly 300,000 suppliers in the government’s larger industrial base. [Link, Link] Many contractors have significant commercial business impacted by the pandemic like in aerospace where 60 percent of the global aviation fleet was grounded during the pandemic. [Link] Boeing faced a $2.4 billion loss (20 percent of revenue) in the second quarter of 2020. The third quarter looked more promising for the company, with losses amounting to $450 million (3 percent of revenue).

From a list of the largest US defense contractors, [Link] the Center collected from the top ten companies to have released their third quarter financial statements by October 30. Aggregate revenues dropped from $93 billion in the three months ending in September 2019 to $85 billion in September 2020 (a fall of 8.6 percent). The performance of those companies’ in terms of revenue indexed to third quarter of 2019 is shown in Figure 5 below. Companies with greater commercial business have taken relatively larger hits in terms of revenue. Companies more reliant on government saw relatively stable or growing revenues.

Figure 5. Quarterly Revenues from Selected Defense Companies, Sep. 2019 = 1.00

Note: Data retrieved on Oct 30, 2020.
From the top ten, only General Electric, Boeing, and Raytheon took net operating losses. Since merging with United Technologies, roughly half of Raytheon’s business is commercial. Though Raytheon was able to squeeze out positive net income in the third quarter, it had the worst second quarter performance of top defense and aerospace companies, losing $3.8 billion (27 percent of revenue).

Supporting Industry Health

Increasing federal contract obligations does not immediately move dollars over to contractors. An obligation is a promise to pay rather than a payment itself. Most of a contractor’s income is derived from their performance on existing contracts. Unfortunately, there is no public database that tracks contract payments as comprehensively as the Federal Procurement Data System tracks obligations. [Link] With total obligations rising, the primary way COVID-19 affected cash flow from government business is through performance challenges such as through a shutdown or partial shutdown without work-from-home opportunities.

Performance challenges. Overall, the designation of the defense industrial base as “critical infrastructure” helped contractors to stay open and continue performing when possible. [Link] It is not surprising then that a small percentage (as of June 10, 960 out of 20,000 firms tracked by DoD) closed for an average of 57 days each, with 101 firms remaining closed. [Link] By September, only 30 firms remained closed. [Link]

Disruptions were not just caused by shutdowns. Many contractors have physical work requirements, particularly in the defense industrial base which accounts for more than two-thirds of total contract spending. The IBIS World COVID-19 impact tool shows aircraft and space vehicle manufacturing to have moderately-low impacts due to work from home requirements. However, shipbuilding, combat vehicles, and guns & ammunition all have moderate impacts, which can be further disrupted by supply chain challenges. For example, upstream suppliers to shipbuilding that are more strongly impacted include manufacturing for: aluminum, metal pipe and tube, screw, nut and bolt, and steel rolling and drawing. [Link]

Some government contractors experienced furloughs, layoffs, and even union strikes. At Bath Iron Works’ shipyard in Maine, 4,300 union workers went on strike in June after months of protest about exposure and a lack of personal protective equipment, in addition to other issues. [Link]

Guidance. One week after the President declared a state of national emergency, the Office of Management and Budget released guidance on contract performance issues, such as the maximization of teleworking including modification of contracts to allow it, provision of excusable delays for contractors in quarantine, and negotiation of equitable adjustments for contractor cost of safety measures while performing government work. [Link] In what has been called the DoD’s “memopaloza,” the Acting Principal Director of Defense Pricing and Contracting (DPC) released about 40 documents allowing companies to continue working, provide liquidity, implement legislation, and increase both speed and transparency in contracting. [Link] Along with the defense industrial base’s designation as critical infrastructure, these measures helped contractors continue performing and collecting payments on a regular basis from the government.

For COVID-19, contractors may submit requests for equitable adjustments due to stop work orders, the purchase of PPE, sterilization, excused delays, and spacing out work areas. The total cost was estimated in June to exceed $1 billion. By October 1, the DoD’s estimate grew to $4 billion. [Link] Guidance emphasizes how equitable adjustments should be made on a case-by-case basis, but there are indications that volume could require some larger settlement packages. [Link]

Section 3610. A major source of cash flow stability came when Congress passed the CARES Act. In a single paragraph, Section 3610 outlined how federal agencies would pay contractor labor costs that went idle due to COVID-19 in order to preserve workforce capabilities. Yet the statute ran into many technical issues, and
required more than 100 pages of explanation from the DoD. For example, Section 3610 costs must be separately accounted for by contractors, does not require annual leave to be run down, applies to all contract types, should be paid through primes, and so forth.

The government plans to reimburse Section 3610 costs at contract billing rates, which includes direct labor, fringe, overhead, general & administrative, and facilities capital cost of money, but not profit. [Link] Therefore, contractors would receive money to cover not just direct employees, but also some part of the cost of indirect labor, facilities, independent R&D, bid and proposal, and other costs.

**Funding Requirements.** All-together, DoD has requested on the order of $12 to $15 billion in appropriations to cover contractor costs of COVID-19. [Link, Link] Congress, however, has not appropriated funding to cover COVID-19 costs stemming from equitable adjustments or Section 3610. Other agencies face similar challenges. Undersecretary of Defense for Acquisition & Sustainment Ellen Lord warned on several occasions that without a supplemental appropriation, the costs will come at the expense of modernization and readiness programs.

Another unaddressed issue is what happens to program baselines. A proportion of the cost and schedule growth may be attributed to COVID-19, pushing some programs over the edge of controls like Nunn-McCurdy breaches for the DoD. How the impacts will be administered is not yet clear.

**Progress payments.** The way government makes payments from the United States Treasury depends on the contract structure. For cost-reimbursable contracts, the contractors receive the full cost of their expenses in the performance of the contract at negotiated rates, usually on a monthly basis. For fixed-price contracts, which usually represent 60 percent of total obligations, [Link] the government allows contractors to invoice for progress payments. Often, a customer doesn’t pay a fixed-price supplier until product delivery. In order to minimize financing and interest costs which ultimately pass-through to the customer, the government will pay its suppliers for 80 percent of allowable costs invoiced no more than monthly. Progress payments for small businesses is 90 percent.

During the COVID-19 emergency, the government increased progress payments from 80 to 90 percent, and from 90 to 95 percent for small businesses. [Link] For example, if an other-than-small business paid $100 in costs for a contract that started in February, it could have invoiced the government for $80. If it paid another $100 in March, then after the class deviation, it would be eligible for an invoice of $90 for March plus another $10 from February so the cumulative progress payment reaches 90 percent. Many kinds of incurred costs like employee benefits and materials are also eligible for progress payments. The government also reimburses 100 percent of progress payments made by the prime to its subcontractors. [Link]

The increase in progress payments is estimated to have infused $3 billion in cash to all levels of the defense industrial base. By mid-August, more than $2.6 billion had already been paid out. [Link] Accelerated progress payments, however, do not consume agency appropriations. The funds have already been promised, they are just leaving the Treasury sooner rather than later. However, when the emergency procedures end and progress payments return to their lower levels, the cash flow advantage can be expected to reverse proportionally.
Part III: Tools & Authorities

FAR Contract Flexibilities

Despite its reputation, a great deal of flexibility exists within the Federal Acquisition Regulation (FAR). Emergency FAR clauses and procedures, for example, have been implemented for the COVID-19 response, often increasing thresholds or delegating approvals to streamline how business gets done. The following statistics do not include DoD Other Transactions contracts, discussed separately on page 13 below.

Competitive Procedures. FAR 6.302 outlines the circumstances that permit contracting without providing for full and open competition. [Link] More than $12 billion (42 percent) of COVID-19 obligations invoked these statutory authorities. FAR 6.302-2, unusual and compelling urgency, was the most commonly used accounting for one-third of all obligations. [Link] Another $2.7 billion invoked an additional ten FAR 6.302 authorities including:

- $889 million using FAR 6.302-1 Other (only one source). [Link]
- $549 million using FAR 6.302-5(a)(2)(i) specified source. [Link]
- $356 million using FAR 6.302-3 industrial mobilization for essential R&D. [Link]
- $354 million using FAR 6.302-4 international agreement. [Link]
- $395 million for brand name description using FAR 6.302-1(c). [Link]

Distribution. Figure 6 depicts the breakout of COVID-19 by business size and type as well as by solicitation procedure. Small businesses received nearly 28 percent of all COVID-19 obligations, roughly on par with overall government contracting. However, 5 percent used set asides such as 8A, women-owned, or veteran-owned, a bit more than half the usual rate. $2.6 billion of obligations went to foreign-owned businesses, mostly large companies incorporated in the United States like Philips North American, Hamilton Medical, and Zoll Medical. Only $140 million went to foreign-owned businesses not incorporated in the United States, the largest being a $50 million contract to Kenya Medical Supplies Authority. The company is under investigation by Kenya’s government for procurement fraud. [Link]

Federal Supply Schedules. Government-wide schedules that simplify order procedures are described in FAR 8.4 and 38. Using an existing multiple award task order contract, a contracting officer may add a task order to take advantage of existing pricing, bulk-buy discounts, and reduced regulations. [Link]

Of COVID-19 contract obligations, $1.1 billion used federal supply schedules (3.6 percent), more than half of which went toward information technology products and services. A government-wide award contract is a similar process dedicated to IT and made up another $565 million (1.9 percent). These proportions are roughly in line with non-COVID-19 contracts, and so they do not indicate a prevalence of use.

Commercial Items. Federal agencies are expected to maximize the use of commercial items for procurement (41 U.S.C. 3307). Contracting officers may use commercial procedures in conjunction with simplified acquisition, sealed bidding, or negotiation. Commercial item procurements bypass over 100 statues and regulations, but still face hurdles. [Link] A contracting officer must make a “commercial item determination”

Figure 6. Business Size, Type Solicitation Procedure

Breakout of federal COVID-19 obligations (except DoD Other Transactions) by business size and type (left) and by use of competitive solicitation procedures (right).
according to FAR 2.101. This process can be lengthy, as it involves special groups within agencies. [Link]

FAR 12.102(f), however, allows “any acquisition of supplies and services” to use commercial item processes for contracts up to $19 million if purchased for recovery from an “attack.” On March 31, the DoD clarified that vaccines, therapeutics, facilities, and a wide range of medical supplies were covered by the class commercial item determination. [Link] The first transactions to invoke FAR 12.102(f) for COVID-19 were signed on March 9 and totaled $1 billion (15 percent) within a month. Use of the procedure quickly dropped off in May, and in July $647 million was de-obligated from contracts that invoked FAR 12.102(f). As of September 28, the authorities were invoked on $1.67 billion (5.6 percent).

Half of all COVID-19 contract obligations reported using commercial items or emergency commercial item authorities. Normally, only about one-third of government contracts use commercial item procedures. The large increase is more than made up by the use of FAR 12.102(f), and perhaps indicates the commercial nature of the pandemic response for items like PPE (76 percent commercial), cleaning products (86 percent), tests/panels (91 percent), and so forth, compared to missions that are often government-unique in the DoD, NASA, and elsewhere.

**Simplified Acquisition.** Provided that the procurement cannot be accomplished through a federal schedule, simplified acquisition procedures can also reduce process burdens. Informal quoting and price comparison may occur, performed orally rather than written. There is no formal acquisition plan. Overall, simplified acquisition may reduce processing time by 90 percent. [Link]

In normal times, the threshold for simplified acquisition is $250,000, and micro-purchases under $3,500 can be paid using a credit card. However, in an emergency like COVID-19, the ceiling on domestic micro-purchases increases to $20,000, on purchase orders increases to $750,000. The threshold for certain commercial items to use the procedures increases from $7 to $13 million (41 U.S.C. 1903, “Special Emergency Procurement Authority”). The government invoked these flexibilities on March 20. [Link] While over one-quarter of all transactions in response to COVID-19 used simplified acquisition procedures, they amounted to only **$1.2 billion** (4 percent) of total obligations. The biggest users of simplified acquisition procedures were cleaning products (29 percent) and janitorial/security services (24 percent). The least likely was construction (0.2 percent).

**Letter contracts.** Also known as an Undefinitized Contract Action (UCA), a letter contract authorizes a contractor to begin work immediately, with more specific terms to be negotiated when time permits. Letter contracts were used extensively in World War II and the decade after to reduce lead times. It may only be used after a written determination “that no other contract is suitable” (FAR 16.603-3). Letter contracts require a statement of urgency and a determination from the head of the contracting activity. Overall, use of a letter contract increases reporting requirements and oversight.

For the Department of Defense, the CARES Act gave flexibilities to letter contracts in two major ways. First, it allows heads of agencies to waive 10 U.S.C. 2326(b) which created a deadline for an agreement on terms and price to be reached before 6 months or 50 percent of the ceiling is obligated. Second, it waives section 2326(b)(3) which requires a qualified contractor price proposal before 50 percent of the contract ceiling is obligated. [Link]

More than 300 COVID-19 contracts (2.2 percent) reported using letter contracts or other undefinitized actions as of September 28. This represents roughly a five-fold increase in the proportion compared to a sample of non-COVID-19 contracts. The obligations to these contracts totaled **$1.1 billion**, but this figure may not represent the total value of work being performed. While the DoD went forward with more than 200 undefinitized contracts, it represents less than 20 percent of total obligations. HHS’s 54 undefinitized contracts tended to be much larger, totaling 80 percent of obligations. By far the largest of these was $413.2 million to Astrazeneca for an Other Transaction
Agreement to develop a vaccine. [Link] Another 20 actions across 13 undefinitized contracts went for the Rapid Acceleration of Diagnostics (RADx) initiative. 13 companies received $145 million to develop and commercialize COVID-19 testing kits. [Link]

Non-FAR Authorities

Other Transactions (OTs). To accelerate the research and prototyping of vaccines and therapeutics, the federal government expanded the use of “Other Transaction” Authority first provided to NASA in 1958 (P.L. 85-568 §203(c)). The CARES Act provided $3.5 billion to Health and Human Services’ Biomedical Advanced Research and Development Authority (BARDA) which uses OTs. The Act also expanded the authority and raised the funding caps for HHS (Section 3301) and DoD (Section 13006) to use OT agreements on larger-scale projects to foster innovation on COVID response efforts.

Since renewed emphasis on the OT authority began in 2016, the use of OT contracts has by 2020 expanded tenfold. Of the $11.3 billion obligated to Other Transactions in fiscal year 2020, $4.7 billion identified COVID-19 in the description. Again, FPDS did not report these COVID-19 obligations detailed above. The Center retrieved them separately from Beta.SAM. [Link]

The Department of Health and Human Services has only used OT authority at most a few times a year since 2006. [Link] Other Transactions from HHS are not tracked in the Beta.SAM report. With another $1.35 billion of OT transactions found in the FPDS data, the total OTs used for COVID-19 reaches $5.3 billion.

HHS quickly obligated $723 million in OTs in the month of March, including $604 million to Janssen (a subsidiary of Johnson & Johnson) and $93 million to Regeneron for antibody therapeutics development. Genentech received $25 million in March for therapeutics. HHS had been dealing with these companies using OTs for years prior to COVID-19.

The DoD’s extensive contracting workforce, totaling more than 26,000 in 2017, [Link] is closely supporting HHS to award Other Transactions for Operation Warp Speed. The Beta.SAM report pulled on October 26 shows that the DoD only put $111 million onto OT contracts for COVID-19 through the month of May, which ramped up to $400 million in June and then $4.3 billion in July alone. DoD data has a standard 90-day lag in reporting, and so more current figures are not available. However, COVID-19 OTs represented more than half of all OTs awarded by the DoD between March and July. DPC reported DoD OTs at $7.6 billion (see Table 2). DoD support of COVID-19 Other Transactions seems to remain robust. For example, on October 13 the DoD awarded a $481 million OT to Cue Health on behalf of HHS to increase production capacity to 100,000 tests per day by March 2021. [Link]

<table>
<thead>
<tr>
<th>Category</th>
<th>Actions</th>
<th>Dollars Obligated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contracts</td>
<td>31,076</td>
<td>$7,358,064,748</td>
</tr>
<tr>
<td>Other Transactions - DPA Title III for Industrial Relief Items</td>
<td>5</td>
<td>$12,624,240</td>
</tr>
<tr>
<td>Other Transactions - Excluding DPA Title III</td>
<td>191</td>
<td>$7,597,332,143</td>
</tr>
<tr>
<td>Financial Assistance - DPA Title III for Industrial Relief Items</td>
<td>26</td>
<td>$320,208,686</td>
</tr>
<tr>
<td>Financial Assistance - Excluding DPA Title III</td>
<td>1,390</td>
<td>$780,180,072</td>
</tr>
<tr>
<td>TOTAL</td>
<td>32,075</td>
<td>$16,240,614,792</td>
</tr>
</tbody>
</table>


Leading the OT procurement effort for the DoD is the Joint Program Executive Office for Chemical, Biological, Radiological and Nuclear (CBRN) Defense out of the Army Materiel Command. [Link] More than 97 percent of the DoD’s Other Transactions for COVID-19 came out of Army Contracting Command. Even though JPEO-CBRND is located in Aberdeen Proving Ground, the Army’s contracting center based there only awarded $486 million out of $4.7 billion in COVID-19 OTs. [Link] Nearly all of the OT contracting
is done out of the Army’s contracting center in Picatinny Arsenal. Since 2015, Picatinny put more OT dollars on contract than the next six largest contracting offices combined. When COVID-19 obligations are included, Picatinny’s total OT contracts rival the rest of the DoD combined. Some of this experience came from servicing the contracts for Defense Innovation Unit. [Link] The scale of Picatinny contracting center’s COVID-19 effort can be appreciated by referencing the past. In fiscal year 2018, Picatinny obligated $6.1 billion total, [Link] of which OTs made up $479 million (8 percent). Over a five-month period March through July 2020, Picatinny put $4.2 billion onto OTs for COVID-19 and another $1.7 billion for defense missions. In other words, Picatinny contracting center obligated nearly as much to OTs in five months as it did over the entire fiscal year 2018 to all contract types. Other DoD offices entering into OT contracts for the COVID-19 response include Army Medical Command ($23 million) and DARPA ($27 million).

While identified OTs contracted out of HHS tend to go directly to a company, the 88 percent of the DoD’s COVID-19 OTs went to consortium management firms. By far the largest recipient of the DoD’s OTs for COVID-19 was Analytic Services Inc. (ASI) at $4.16 billion (87 percent) which handles the Medical CBRN Defense Consortium. The next largest was Clinical Research Management at $709 million (4.5 percent). The way OTs are reported, there is no further insight into which companies received funding for what products, but 98.5 percent of all dollars went to nontraditional companies. [Link] NPR reported on September 29 that $6 billion in COVID-19 OTs awarded through ASI including $1.6 billion went to Novavax, $1.95 billion to Pfizer, $1.79 billion for Sanofi with GSK, and $1 billion to Johnson & Johnson. [Link] Regeneron’s therapeutic funded through ASI in July was used to treat President Trump’s COVID-19 infection in September. It leveraged prior antibody work started under a $284 million OT in January from HHS’s BARDA. [Link]

Studies continue about the effectiveness of the treatment. [Link]

Unsurprisingly, 99.7 percent of COVID-19 OTs are for prototyping efforts. The only production effort was $14.2 million to Augustine Consulting, including at least $5 million for a situational awareness tool for the defense industrial base. [Link] However, with vaccines, tests, therapeutics, and other developments maturing, the government could go straight into production using the OT vehicles or a FAR-based solution, so long as it was competitively awarded in the first place. [Link] With more than 98 percent of COVID-19 OTs competitively awarded by the DoD, follow-on production shouldn’t be a problem. However, by the time a company demonstrates their product as safe and effective, companies may not need government financing to get it ready for commercialization and scaling. For example, Moderna has taken in $1.1 billion in consumer deposits alone for its vaccine. [Link]

The Defense Commercial Solutions Openings (CSOs) Pilot Program, authorized by Section 880 of the 2017 National Defense Authorization Act, provides another rapid process for buying innovative commercial products and R&D services. [Link] One example award focused on COVID-18 that used the CSO procedure is a $32.9 million FAR 12 fixed-price contract for expanding production capacity of robotic pipette tips for diagnostic tests. [Link]

The CSO is a non-FAR solicitation procedure that is similar to Broad Agency Announcements (FAR 35.016). CSOs include a long open period for addressing a broad topic rather than a defined requirement. Contractors may submit white papers and make oral presentations. A series of negotiated task orders proceed in a competitive environment. The CSO process may use either OT or fixed-price contracts that are subject to the FAR. [Link] Importantly, CSOs have a class deviation making price a less important evaluation

over $211 million (3 percent), perhaps a leading indicator of future growth. ACC-NJ Picatinny again leads the way with $131 million in production OTs, including $111 million to Palantir, $13 million to Shield AI, and $3.5 million to IBM.

---

3 The DoD still doesn’t have the muscle movements to take successful OT prototypes into sole-source production using OTs. In 2019, the DoD awarded eight production OTs work just $1 million. Thus far in 2020, the awards grew to 40 worth
factor than technical, importance, and funds availability. [Link]

The Defense Innovation Unit piloted and trained contracting officers within the military services on CSOs. AFWERX has made extensive use of CSOs for bringing in innovative nontraditional companies into the DoD, awarding 46 percent of their contracts using CSO procedures. [Link] Through AFWERX, the Joint Acquisition Task Force created an one-stop shop industry portal called Unite & Fight. [Link] The organization released two CSO solicitations on April 6 and July 10. [Link, Link]

On April 6, the JATF created another CSO with the Army’s xTechSearch for increasing industrial capacity for ventilators. [Link] In just 10 days, 150 applicants submitted white papers. The xTech judges invited eight Stage 1 winners to give pitches, each receiving $5,000, of which five won Stage 2 with awards of $100,000. [Link]

The Defense Health Agency also plans to hold an industry pitch day for on November 10 using CSOs. The goal is to issue each service member a wearable device that logs proximity for use in contact tracing. [Link]

Homeland Security also announced a new CSO Pilot Program for COVID-19 as part of the Procurement & Acquisition Innovation Response team. Between April 9 and August 4, more than 200 proposals entered a five-step process that took an average of 45 days from proposal to vendor notification. [Link] There is not yet clear indication of how many awards the department made from the pool and for what products. However, the CSO Pilot Program expires in 2022, prompting the department’s chief procurement officer to request to make the authority permanent. [Link]

Unfortunately, the Center has not discovered a standard way of identifying CSO obligations in FPDS data, and so further analysis cannot be provided. Bloomberg Government identified $168 million of DoD spending via CSOs in FY 2020. [Link]

**Defense Production Act**

Title I of the Defense Production Act (DPA) allows the government to require a supplier to prioritize its contract order above all others. The President’s March 18th Executive Order 13909 provided Health and Human Services with DPA rating authority. [Link] Two primary titles under the DPA include Title I for assigning priorities and allocations, and Title III for expansion of productive capacity. [Link]

For example, HHS used DPA Title I to prioritize the production and delivery of 30,000 ventilators from General Motors. The company teamed up with Ventec, a ventilator firm with 111 employees, to expand their production by more 60-fold. [Link] The team successfully delivered 30,000 ventilators on-time (August 31). [Link] By contrast, DPA Title III projects are used for expanding production capacity rather than receiving delivery of products. For example, 3M received a $76 million DPA Title III contract to increase N95 production capacity to 13 million per month by June 2020. [Link]

Center analysis has identified 14 HHS DPA Title I rated contracts worth over $3.15 billion. The majority went toward the production of 187,431 ventilators. Ten identified contracts have ceilings ranging from $9.1 million to $646.7 million. There is little correlation between production quantity and unit-price. The lowest unit-price was $5,912 to Hill-Rom for 3,400 ventilators [Link], while the highest unit-price was $39,107 to Hamilton for 14,115 ventilators. [Link] Medtronic reports that ventilators can cost between $5,000 and $50,000 depending on unit qualities including lifespan, preventative maintenance, and battery life. [Link] For example, Hill-Rom ventilators have a 6 hour battery life and are not intended for ambulance or air transportation [Link] while the Hamilton T-1 lasts over 9 hours and is approved for emergency transport. [Link] Other terms and conditions of the contract could also account for discrepancies, such as spare parts or logistics.

On May 1, HHS contracted with Marathon Medical [Link] and Retractable Technologies [Link] for needles
and syringes. Those contracts were both modified on May 28 to add DPA Title I “DO” ratings. Marathon Medical now has a ceiling of $53.9 million [Link] while Retractable Technologies received $83.9 million. [Link]

These Title I contracts have been in the works for since March. Another contract with Becton, Dickinson, and Co. used Title I for needles and syringes. The total set of contracts totaled $43.3 million, but only the initial contract was rated to give the company priority access to raw materials and logistics. [Link] Quadril received the last Title I contract to supply tests for 14,000 nursing homes. [Link, Link]

Table 3. Selected DPA Title I Contracts

<table>
<thead>
<tr>
<th>Agency</th>
<th>Company</th>
<th>$M</th>
<th>Link</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHS</td>
<td>Philips</td>
<td>$646.7</td>
<td>Link</td>
<td>43K ventilators</td>
</tr>
<tr>
<td>HHS</td>
<td>Hamilton</td>
<td>$552.0</td>
<td>Link</td>
<td>14.1K ventilators</td>
</tr>
<tr>
<td>HHS</td>
<td>General Motors</td>
<td>$489.4</td>
<td>Link</td>
<td>30K ventilators</td>
</tr>
<tr>
<td>HHS</td>
<td>Vyaire</td>
<td>$407.9</td>
<td>Link</td>
<td>22K ventilators</td>
</tr>
<tr>
<td>HHS</td>
<td>Zoll</td>
<td>$350.1</td>
<td>Link</td>
<td>18.9K ventilators</td>
</tr>
<tr>
<td>HHS</td>
<td>GE &amp; Ford</td>
<td>$336.0</td>
<td>Link</td>
<td>50K ventilators</td>
</tr>
<tr>
<td>HHS</td>
<td>General Electric</td>
<td>$64.1</td>
<td>Link</td>
<td>2.4K ventilators</td>
</tr>
<tr>
<td>HHS</td>
<td>ResMed</td>
<td>$32.0</td>
<td>Link</td>
<td>2.5K ventilators</td>
</tr>
<tr>
<td>HHS</td>
<td>Hill-Rom</td>
<td>$20.1</td>
<td>Link</td>
<td>3.4K ventilators</td>
</tr>
<tr>
<td>HHS</td>
<td>Medtronic</td>
<td>$9.1</td>
<td>Link</td>
<td>1K ventilators</td>
</tr>
<tr>
<td>HHS</td>
<td>Retractable Tech.</td>
<td>$83.9</td>
<td>Link</td>
<td>Needles</td>
</tr>
<tr>
<td>HHS</td>
<td>Quidel</td>
<td>$64.0</td>
<td>Link</td>
<td>Testing</td>
</tr>
<tr>
<td>HHS</td>
<td>Marathon Medical</td>
<td>$53.9</td>
<td>Link</td>
<td>Medical Supplies</td>
</tr>
<tr>
<td>HHS</td>
<td>Becton, Dickinson</td>
<td>$43.3*</td>
<td>Link</td>
<td>Needles/Syringes</td>
</tr>
</tbody>
</table>

Source: List of Defense Production Act Title I contracts compiled by the Center. This is not an exhaustive list. Though $43.3 million is shown for Becton, Dickenson, only the first task order was rated. However, it impacts up to $43.3 million of the company’s work.

Title III of the Defense Production Act allows the government to invest in specific industries using grants, purchases, and loans to increase the supply of critical items. The CARES Act appropriated $1 billion into the DPA Fund. The DoD allocated $213.1 million to industrial base expansion for N95 masks, testing, injection technology, and other areas. Another $100 million went in support of Executive Order 13922 to execute the DPA Title III loan program in collaboration with the International Development Finance Corporation (DFC) with the goal of reshoring critical healthcare production capacity. The Center identified a total of $477 million in DPA Title III projects supporting the COVID-19 response. Additional funding sources included $407.5 million from HHS CARES Act funding and $17.6 million from the Health Care Enhancement Act. [Link]

Table 4. Selected DPA Title III COVID-19 Projects

<table>
<thead>
<tr>
<th>Agency/HHS</th>
<th>Company</th>
<th>$M</th>
<th>Link</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>DoD/HHS</td>
<td>ApiJect</td>
<td>$138.0</td>
<td>Link</td>
<td>30M syringes/mo</td>
</tr>
<tr>
<td>DoD/HHS</td>
<td>3M</td>
<td>$26.0</td>
<td>Link</td>
<td>26M N95/mo</td>
</tr>
<tr>
<td>DoD/HHS</td>
<td>Puritan</td>
<td>$75.5</td>
<td>Link</td>
<td>20M swabs/mo</td>
</tr>
<tr>
<td>DoD/HHS</td>
<td>3M</td>
<td>$76.0</td>
<td>Link</td>
<td>13M N95/mo</td>
</tr>
<tr>
<td>DoD/HHS</td>
<td>Owens &amp; Minor</td>
<td>$29.0</td>
<td>Link</td>
<td>12.5M N95/mo</td>
</tr>
<tr>
<td>DoD/HHS</td>
<td>Honeywell</td>
<td>$27.4</td>
<td>Link</td>
<td>12M N95/mo</td>
</tr>
<tr>
<td>DoD/HHS</td>
<td>BioFire Defense</td>
<td>$3.1</td>
<td>Link</td>
<td>110K test kits/mo</td>
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<tr>
<td>DoD/HHS</td>
<td>Hollingsworth</td>
<td>$2.2</td>
<td>Link</td>
<td>3.1M N95 flush/mo</td>
</tr>
</tbody>
</table>

Note: List of Defense Production Act Title III contracts compiled by the Center. This is not an exhaustive list.

Many DPA efforts directly focused on the COVID-19 response occurred between March and May. In June and the following two months, the DoD used most of remaining $687 million of CARES Act DPA funds to support defense industrial base efforts impacted by COVID-19. [Link] By October 1, 97 percent of the funds had been obligated to companies through DPA Title III awards. The investments included:

- $252.1 million to sustain the aircraft and propulsion industrial base.
- $236 million for the shipbuilding industrial base.
- $79.1 million for electronics industrial base.
- $39.8 million for materials and hypersonic vehicles industrial base.
- $35.5 million for the space industrial base.
- $20.9 million for body armor, force protection, survivability equipment, uniforms, and soldier survivability industrial base. [Link]
- Additional information on current DPA Title III opportunities is available on the DoD’s website. [Link]

DoD has robustly defended this use of CARES Act funds as appropriate and explicitly authorized. [Link, Link] On October 2, members of Congress sent a letter to Secretary of Defense Mark Esper requesting documents to aid in their investigation of potentially inappropriate use of CARES Act funds through the DPA. [Link] In an October 6th fireside chat with the Center’s executive director Jerry McGinn, however, House Armed Services Committee chairman Rep. Adam Smith (D-WA) said “there’s nothing to investigate here, in my view… Very specifically, it [the CARES Act] said one of the COVID related expenses
you could deal with was the defense industrial base, which they did.” [Link, Link] At the request of Congress, the DoD Inspector General launched an audit into the matter on October 14. There is no indication of when findings will be made public. [Link] There is a separate audit launched by the HHS Inspector General into their use of DPA funds for ventilator purchases. [Link]

**Prevention of hoarding and price gouging.** Under Section 102 of the Defense Production Act [50 U.S.C. 4512], the President may designate materials the accumulation of which is unlawful beyond the “reasonable demands of business, personal, or home consumption.” [Link] On March 23, 2020, President Trump issued Executive Order 13910 on Preventing Hoarding of Health and Medical Resources to Respond to the Spread of COVID-19. [Link] In May and July, the Department of Justice’s COVID-19 Hoarding and Price Gouging Task Force arrested persons in Staten Island New York and Suffolk County New Jersey for violating DPA anti-hoarding/price gouging provisions. [Link] In Staten Island, Kevin Lipsitz resold N95 masks with 150 to 500 percent markups and delivered them to customers late. [Link] Richard Schirripa in Suffolk County had been buying N95 masks for $10 dollars and repeatedly resold them for as much as $15 dollars. Agents recovered 6,660 masks. [Link]
Part IV: Other Topics

Operation Warp Speed

In the middle of May, the Joint Acquisition Task Force coalesced around two lines of effort: Operation Warp Speed (OWS) and the Strategic National Stockpile (SNS). Warp Speed’s mission is to prioritize funding and distribution of: (1) vaccines; (2) therapeutics; and (3) diagnostics. The objective is to produce and deliver 300 million doses of a safe and effective vaccine by January 2021. [Link]

Operation Warp Speed includes some 600 personnel from HHS and 90 personnel from DoD. While HHS Secretary Alex Azar and DoD Secretary Mark Esper are formally in charge, the day-to-day civilian leader is Moncef Slaoui. He was appointed by the President after having led vaccine development for GlaxoSmithKline. The two major lines of developmental effort are for vaccines and therapeutics. Slaoui’s chief operating officer is General Gustav Perna, former head of Army Materiel Command. He leads up the manufacturing and logistical efforts of OWS. [Link]

OWS obligated more than $10 billion across six vaccine developments, and $873 million to three therapeutic developments. [Link] Pfizer’s vaccine has more than 42,000 participants enrolled in its stage three clinical trials and expects to apply for an Emergency Use Authorization in November with the Food and Drug Administration. [Link] The Emergency Use Authorization allows the FDA to facilitate the availability of an unapproved product during a state of emergency and provides companies with some tort liability protections. [Link] By the end of October, the FDA listed 288 medical products (e.g., screenings) approved for EUA. Another 22 PPE products received an EUA, 26 ventilators and other medical devices, and 5 drug and biological products. [Link]

Table 5. Operation Warp Speed, Select Efforts

<table>
<thead>
<tr>
<th>Recipient</th>
<th>$M</th>
<th>Type (Stage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderna</td>
<td>$2,455</td>
<td>Vaccine (3)</td>
</tr>
<tr>
<td>Sanofi &amp; GSK</td>
<td>$2,000</td>
<td>Vaccine (1/2)</td>
</tr>
<tr>
<td>Pfizer &amp; BioNTech</td>
<td>$1,950</td>
<td>Vaccine (3)</td>
</tr>
<tr>
<td>Novavax</td>
<td>$1,600</td>
<td>Vaccine (1/2 US)</td>
</tr>
<tr>
<td>Johnson &amp; Johnson</td>
<td>$1,500</td>
<td>Vaccine (3)</td>
</tr>
<tr>
<td>Astrazeneca</td>
<td>$1,200</td>
<td>Vaccine (3)</td>
</tr>
<tr>
<td>Regeneron</td>
<td>$450</td>
<td>Therapeutic</td>
</tr>
<tr>
<td>Eli Lilly</td>
<td>$375</td>
<td>Therapeutic</td>
</tr>
<tr>
<td>Genentech</td>
<td>$48</td>
<td>Therapeutic</td>
</tr>
<tr>
<td>Emergent</td>
<td>$628</td>
<td>Manufacturing</td>
</tr>
<tr>
<td>Texas A&amp;M &amp; Fujifilm</td>
<td>$265</td>
<td>Manufacturing</td>
</tr>
<tr>
<td>Corning</td>
<td>$204</td>
<td>Vials</td>
</tr>
<tr>
<td>Siro</td>
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<td>Vials</td>
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<tr>
<td>Apiject</td>
<td>$138</td>
<td>Syringes</td>
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<tr>
<td>Grand River Aseptic</td>
<td>$160</td>
<td>Fill-finish</td>
</tr>
<tr>
<td>Cytiva</td>
<td>$31</td>
<td>Manufacturing</td>
</tr>
<tr>
<td>Adv. Regenerative Mfg.</td>
<td>$7</td>
<td>Manufacturing</td>
</tr>
</tbody>
</table>

Note: List of select efforts for vaccines, therapeutics, manufacturing vaccines, vials, syringes, and fill-finish from OWS in millions of dollars. [Link]

The manufacturing and logistics effort is a “whole of government” approach to assuring distribution of the vaccine when available. “It's not a certainty,” said Slaoui, “but the plan—and I feel pretty confident—should make it such that by June [2021], everybody could have been immunized in the U.S.” OWS developed the Tiberius platform to collect, correlate, and visualize data across the operation. [Link] The software platform is being developed by Palantir to help allocate vaccines when the time comes. [Link] HHS has previously spent more than $27 million on Palantir’s tools, including $7.5 million for HHS Protect to track COVID-19 hospitalizations. [Link]

Supply Chains

COVID-19 tested the medical supply chain’s ability to surge production and distribution of critical products. Peak demand for N95 masks during the crisis was estimated at roughly 300 million per month compared to pre-pandemic production of 42 million per month. [Link] The Strategic National Stockpile was unable to fill the gap, only containing 12 million of the 3.5 billion N95 masks the healthcare system was estimated to need. [Link] FEMA reported that the supply of N95 masks won’t catch up with demand until January 2021. As a
House Oversight committee letter explained: “Internal HHS documents reportedly show the federal government has fewer than 90 million of the 300 million N95 masks promised several months ago. Some nurses have had to re-wear N95 masks ‘more than the five times recommended by the CDC.’” [Link] Although N95 masks are intended to be disposed, decontamination systems have become commonly used to address the shortage. [Link]

One issue affecting supply is the uncertainty of demand signals. Ellen Lord explained that the use of options in contracts for PPE should allow the government to avoid buying the full capacity should demand subside due to a slow-down in COVID-19. [Link] However, that can affect the willingness of companies to invest in expansion. If the emergency subsides sooner than expected, companies don’t want to be caught over-investing for a market whose demand shrivels up. “Manufacturers are hoping that demand doesn’t dry up,” industry expert Chaun Powell said, “but they have to prepare for the worst.” [Link] For example, Lydall makes filters for N95 masks and invested $25 million to increase production. [Link] The company received a contract from the government with a $13.5 million ceiling to offset the costs, but less than half of that has been obligated thus far. [Link]

Domestic production of test kits grew from just 250,000 per month in May to 8 million per month in July. Puritan Medical Products is one of just two manufacturers of specialized swabs needed for COVID-19 tests. The company received $75.5 million of DPA funding to help open a new facility in Maine and increase production from 18 million swabs per month in the existing facility [Link] By July, production reached 56 million. [Link] On October 12, Puritan’s second facility opened expected to increase total swab production to 90 million. [Link]

To support Puritan’s ramp up, the DoD facilitated a relationship with Bath Iron Works. In May, BIW—which builds Navy warships—agreed to build 30 out of 40 total machine tools necessary for Puritan’s expansion. [Link] As Air Force contracting chief Cameron Holt recalled, “[W]hen the government first approached the firm, its executives saw no clear way they could ramp up production at the scale and on the timeline federal officials were asking for… So we asked

Bath Iron Works’ leadership if they would partner with us and with Puritan to help them rapidly stand up machine tools and the plant and equipment necessary. They said, ‘Absolutely, we’re in,’ and they and their supply base set up all those machine tools to rapidly start churning out a high number of nasal swabs. It was incredible to watch.” [Link]

Ventilator shortages were dire but rather short-lasting. In a typical year, US companies produce about 29,000 ventilators of all types. The total stock in hospitals was about 160,000 before the pandemic. [Link] Only 62,000 were full-featured ventilators, and of that more than 46 percent were designed for pediatric and neonatal care. The Strategic National Stockpile had another 13,000 ventilators stored. [Link]

In order to support the surge in production, the Vent Connect platform launched on May to help connect ventilator companies with component suppliers. It was developed by Google in concert with the Aerospace Industries Association (AIA) and the Advanced Medical Technology Association (AdvaMed). The platform brings together more than 400 companies in AdvaMed and 300 in AIA, with an additional 50 companies joining like Stanley Black & Decker. [Link] On the platform, suppliers identify their capacity and materials. Manufacturers review the suppliers and can share their requirements. Pre-negotiated prices in some cases facilitate transactions. On August 3rd, Vent Connect was rebranded Med Device Network and AdvaMed took over management. It expanded its coverage to all medical devices and diagnostic tests. [Link]

Supply chain challenges were not limited to PPE, tests, and ventilators. Shortages in various other supplies popped up, such as oxygen delivery systems which had only three manufacturers in North America. Whereas U.S. models of oxygen regulators and flowmeters are priced at more than $200, the products are available in China for less than $10. [Link]

COVID-19 supply chain issues have also justified calls to re-shore production of critical manufacturing capabilities not just in medical devices, but also in national security. This requires targeted tools like DPA Title III and a “laser focus on getting out of the China business with respect to industrial capabilities critical to national security.” [Link] While there is broad
consensus on the need to rebuild domestic manufacturing capacity in these areas, there are disagreements on how best to do this. Some Congressional members, for example, propose strengthening Buy American provisions and have added an amendment to the FY 2021 National Defense Authorization Bill. The provision proposes to increase the content of defense component parts originating in the United States from 50 percent to 75 percent by October 2021, increasing 5 percent thereafter. “If the coronavirus pandemic has taught us anything,” supporters of the bill wrote, “it is just how critical supply chains can be in a time of crisis.” [Link] Strengthening Buy America provisions, however, will have broad effects that are not focused on the critical supply chain vulnerabilities with respect to Chinese sources and could damage long-term economic health. [Link]

A renewed focus on supply chains has also heightened the government’s concern about a lack of insight. Often, agencies deal with a prime contractor who acts as a lead systems integrator. Studies that reach down the supplier tiers for a single program can be expensive, return only a static picture, and do not account for interactions between programs and suppliers. Artificial intelligence and blockchain tools are two approaches for increasing insight. However, opacity of supply chains will remain a problem for years to come.

Conclusion

When COVID-19 struck in March 2020, government officials made extensive use of emergency authorities for federal contracting. With speed comes risk, and oversight officials will have their hands full auditing the response. When the national emergency is over, the Center for Government Contracting will watch closely to see what procedures and cultural habits stick around and which return to a pre-pandemic pace. [Link] Yet COVID-19 also has squarely focused attention on emergency surge capacity and resilient supply chains. That focus is not limited to pandemics. With the rise of great power competition, the national security community will have to consider its preparedness. A recent Center White Paper on building long-term industrial resilience focuses on exactly this issue. As noted in that essay, “Examining how the defense industrial base has mobilized to meet crises from the 20th century to more recent efforts, including the response to COVID-19, can help us to separate fact from myth and start to identify best practices for the future.” [Link] Emergency situations like pandemics and armed conflict present existential risks to the welfare of the nation. To effectively manage the risk, some notions of business efficiency must be sacrificed for surge capacity and industrial resilience. Grappling with that challenge in a society dedicated to free markets will require additional research and robust debate.

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