

Ending drug shortages

New strategies to supply assurance



Whether it is issues with the quality of drug manufacturing, natural disasters that disrupt normal product availability, or payer programs that unnecessarily complicate medication access, all of these are real scenarios that pharmacists have had to navigate prior to and since the COVID-19 pandemic. All of these situations illustrate the inherent fragility in the supply chain mechanisms that provide access to pharmaceuticals. The good news is that these circumstances have drawn the attention of many audiences and have increased the understanding of supply chain stability as a matter of national security. Still, this increased awareness must be translated into meaningful action.

In order to understand where we need to go, it is important to recognize where we have been and what actions have already been implemented. In this document, we will describe the strategies Vizient and its members have taken to improve the resiliency of the supply chain, the benefits already recognized and the opportunity for an environment in which drug shortages and other disruptions are truly eradicated.

A preview of things to come

As with almost all aspects of healthcare, it is very difficult to think of practices before the pandemic. However, our experience with critical supply chain issues did not originate with COVID-19. In September 2017, the fragility of supply was put under the microscope when Hurricane Maria hit the U.S. territory of Puerto Rico. Due to tax incentives, a high concentration of pharmaceutical and medical supplies manufacturers chose Puerto Rico as the production center for drugs, IV bags, saline, anesthesia gases and more. The devastating category 5 hurricane led to the disruption in supply of more than 90 medical products, including 40 drugs.¹ This disaster exacerbated the issue of transparency and protection from supply chain disruption and was the precursor to future supply disruptions and drug shortages that would later be experienced by health systems and hospitals during the COVID-19 pandemic.

While drug shortages have plagued healthcare for many years, according to research by the University of Utah Drug Information Service and American Society of Health System Pharmacists (ASHP), the number of new drug shortages has declined. However, the number of existing shortages has remained persistently high, which could suggest that disruptions are lasting longer. Patient care will continue to be affected until drug shortages are eradicated. And, injectable agents continue to be impacted significantly by shortages.

Some facts:

- The number of new drug shortages declined from 129 in 2020 to 114 in 2021. This downward trend has existed since 2018.
- The number of active shortages has remained above 200 since 2018 and actually increased during the fourth quarter of 2021.
- Of the existing shortages today, the percentage of injectable drugs has increased. In 2021, 66% of drugs in short supply were generic injectables.²

1 Why so many medicines are in short supply months after Hurricane Maria: <https://www.cbsnews.com/news/why-so-many-medicines-are-in-short-supply-after-hurricane-maria/>.

2 Association of Health System Pharmacists: <https://www.ashp.org/drug-shortages/shortage-resources/drug-shortages-statistics?loginreturnUrl=SSOChechOnly>.



Identifying the “true” root cause

A 2021 survey by University of Utah Drug Information Service revealed that 27% of shortages are caused by issues where there is more demand than supply. In addition, 22% are a result of manufacturing issues. This could be related to quality challenges, especially for injectables that require sterilization processes, as well as the cost of manufacturing. However, the most significant reason for drug shortages – 42% of reported reasons – is actually unknown to the public. The Food and Drug Administration (FDA), which has better insight as to the reasons for shortages, states that the major reason for shortages has been quality and manufacturing issues.³

With such a significant portion of drug shortages not aligned to a specific and/or publicly disclosed cause, this leads to the conclusion that a multitude of interrelated challenges that take place across the supply chain, both upstream and downstream, contribute to the fragility we experience. As such, it is unlikely that any singular solution would remediate all supply challenges. In this brief, we will identify the obstacles to supply resiliency that impact all stakeholders. We will also address how Vizient has been addressing drug shortages for more than a decade prior to the COVID-19 pandemic, during the pandemic, and the strategies that are being designed and implemented today to ensure a future of uninterrupted access. Given our position at the center point of the supply chain, Vizient is

uniquely equipped to address quality, resiliency, access, price, transparency and other areas that impact uptake, continuity of care and ultimately patient outcomes.

Addressing drug shortages prior to the COVID-19 pandemic

Combatting drug shortages with predictive demand

Supporting hospitals in navigating drug shortages has always been a priority with Vizient. This protection from drug shortages began with the Novaplus program, the pharmaceutical industry's largest private label program, which launched in the 1990s. The industry-leading private label program delivers a consistent supply of competitively priced medications for both inpatient and outpatient facilities. The program utilizes market intelligence and data insights to provide suppliers with predictive demand, while giving health systems and hospitals access to more than 900 national drug codes (NDCs), across all types of spend, including group purchasing, wholesale acquisition cost (WAC) and 340B, along with additional value through rebates.

Of the current drugs in short supply as of March 2022, according to ASHP, more than 85% of these NDCs are available through the Novaplus label today. In addition, of the most common drugs used in emergent and critical care, 87% are available through the Novaplus label.⁴

3 Food and Drug Administration (FDA): <https://www.fda.gov/drugs/drug-shortages/frequently-asked-questions-about-drug-shortages#q4>

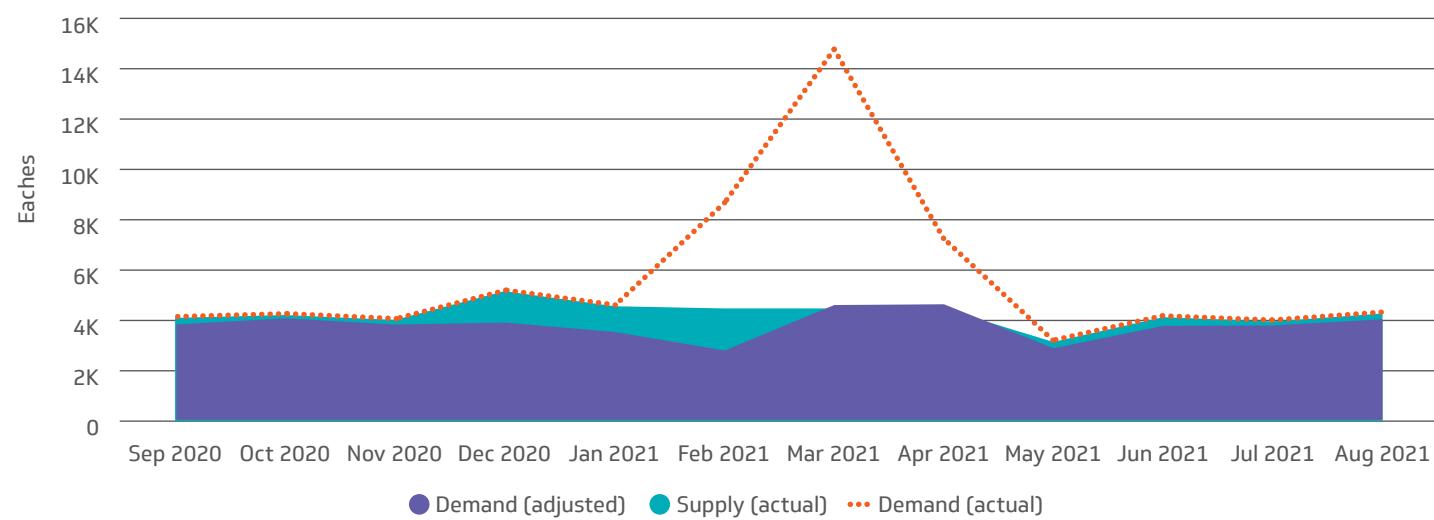
4 Vizient member data

Proof of protection from drug shortages

How does Novaplus deliver protection from drug shortages? During times of unexpected supply disruption and hardship, even providers of health systems that were not affiliated with Vizient were able to access the Novaplus private label product. For example, when a drug used to treat life-threatening meningitis was in short supply, Vizient was able to grant emergency access to the Novaplus-labeled product to the distributor of a non-Vizient member hospital and the patient was treated in less than six hours (Chart 1).

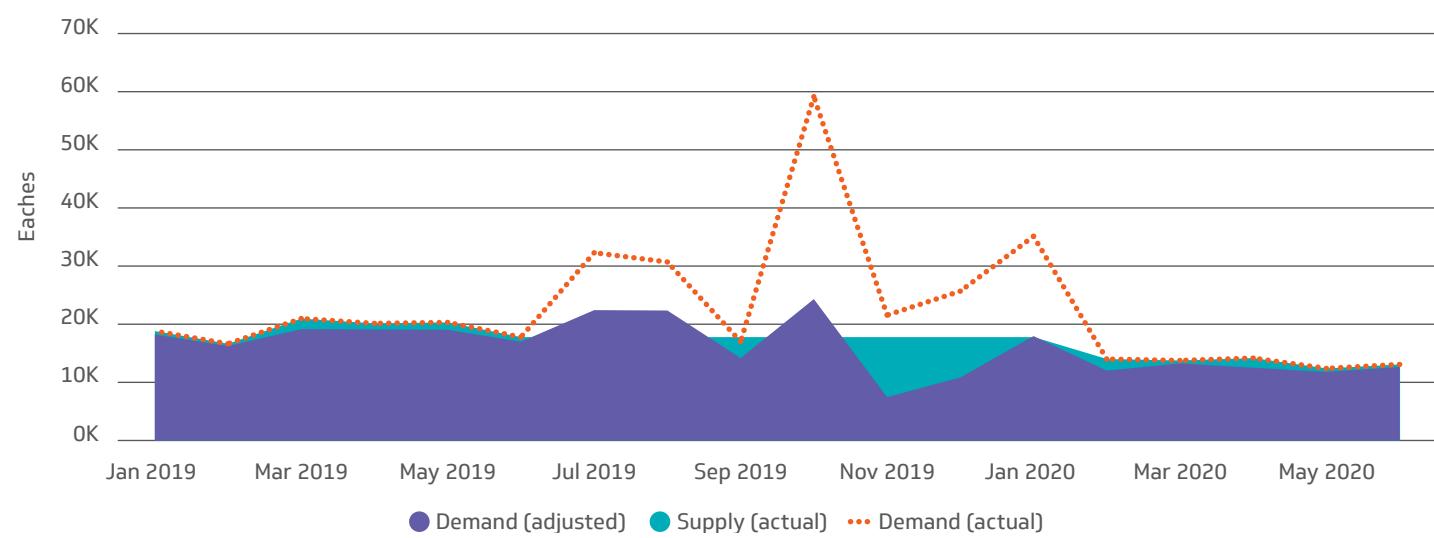
In another case, in 2019, the market experienced a short supply of a critical pediatric oncology drug, when the *New York Times* reported that one of the two suppliers pulled out of the market. The Novaplus-labeled product was the only available inventory, and Vizient was able to address a request for utilization of Novaplus-labeled vials for compassionate use to a non-Vizient member. Overall fill rate during six month period of July 2019 to December 2019 was approximately 95% when adjusting the demand based on historical purchase patterns for that time frame (Chart 2).

Chart 1: Actual and adjusted demand compared to actual supply for injectable rifampin, Sept. 2020 to Aug. 2021



Source: Vizient member data

Chart 2: Actual and adjusted demand compared to actual supply for injectable vincristine, Jan. 2019 to May 2020



Source: Vizient member data

Amplifying critical pharmacy challenges through advocacy

In addition to Novaplus, advocacy has been and remains a front line, critical and effective defense for addressing both drug shortages and other key issues affecting pharmacy practice and patient care. Vizient has long engaged FDA, the Drug Enforcement Agency (DEA) and Health and Human Services.

For example, Vizient advocated for the passing of the FDA's Reauthorization Act of 2017. This allowed for expedited review of a new pathway if there are less than three approved generics, or if the generic is on the FDA drug shortage list.

In July 2018, the FDA formed a new drug shortages task force to advance long-term solutions to prevent shortages. At the time, Vizient applauded their efforts in focusing on stable and reliable supply, along with cost and safety, stating:

“ For over a decade, drug shortages have plagued hospitals and become a routine obstacle around which providers have had to navigate. It is a natural extension of Vizient’s mission to work collaboratively with all stakeholders to find innovative solutions to prevent drug shortages. Vizient is committed to working with the FDA and other stakeholders to improve the safety and reliability of the supply chain. ”

– Dan Kistner

Group SVP, Pharmacy Solutions, Vizient Inc.

Then In October 2018, the FDA also held a series of listening sessions and extended invitations to key healthcare organizations to participate, including Vizient. The outcome of these sessions included four general themes outlined by the FDA:

1. The impacts of drug shortages affect every level of the healthcare system, ultimately compromising the standard of care, producing waste and increasing costs.
2. Multiple market factors such as buyer and seller consolidation, low margins and contracting practices contribute to drug shortages.
3. It is unclear what the right level of transparency is based on manufacturing security concerns, and hospital, pharmacy, and GPO needs. The healthcare community would like more transparency throughout the supply chain.
4. Multiple federal agencies such as the FDA, Drug Enforcement Administration and CMS, have different authorities on drugs, which makes it hard for both industry and hospitals to manage.

Vizient pre-pandemic areas of focus to mitigate drug shortages

- Failure to supply program
- Wholesaler fill rate monitoring
- Wholesaler fill rate penalties
- Support for the University of Utah
- Clinical resources and recommendations for alternative products
- Developing a database of manufacturing locations
- Wholesaler stocking language in agreements
- At risk contracting
- Advocacy work: DEA, GDUFA, CREATES Act

At this time, issues of quality, manufacturing modernization and getting more supply into the market were already key areas of focus for both government entities and for Vizient.

Vizient continued to voice efforts through participating in sessions with the Duke Margolis Center for Health Policy, including *Identifying the Root Causes of Drug Shortages and Finding Enduring Solutions*. Vizient also hosted congressional briefings in Washington D.C., with provider members, that focused exclusively on drug shortages and pricing issues in order to help bring these challenges to the attention of lawmakers. In the June 2019 briefing, Vizient demonstrated to lawmakers the intersection and impact of drug shortage timing and price changes for drugs with the highest increases over a three-year period.

Below are specific examples of communications from Vizient to policy makers, including the FDA and CMS, as well as congressional briefings that Vizient participated in related to drug shortages and access to essential medications.

- **Support for the Drug Shortages Shelf Life Extension Act**
- **Impactful shortage of contrast media**
- **Congressional Briefing to Discuss Pharmaceutical Challenges and Solutions Facing America’s Hospitals**
- **Congressional Briefing to Address Rising Prescription Drug Costs**

Managing drug shortages: findings from the Vizient Drug Shortage and Labor Cost report

A high percentage of respondents' top three operational impacts included:

- Delays in inpatient medication administration (most common)
- Delays in outpatient infusions
- Delays in medical procedures

Additional labor costs

\$359M

Additional labor expense per year

8.6M

Additional personnel hours per year

Managing drug shortages

20+

Over half of the respondents reported that they had managed at least 20 shortages during the six months from July to December 2018.

50+

Of this group, one-third reported that they had managed more than 50 shortages during this time.

June 2019 also marked a significant milestone in which Vizient unveiled the [Drug Shortages and Labor Cost Report](#). Through a Vizient member survey, Vizient quantified both the financial and resource impact that the management of drug shortages had on U.S. hospitals. The survey revealed that drug shortages were a **\$359M labor problem**. In addition, hospital and health systems were allocating **8.6 million hours of additional labor to manage shortages**. Advocacy and media coverage elevated the impact of drug shortages to a new level, focusing on the additional direct and indirect impact of drug shortages revealed from the survey findings, including:

- Increases in drug budget
- Lost revenue from cancelled infusions and procedures
- Increased full-time pharmacist and pharmacy technician employees needed for shortages
- Reallocation of pharmacy resources which leads to lost productivity and impact in other areas
- Documented medication errors potentially resulting in harm

The year 2019 closed with another significant win -- the signing of the Creating and Restoring Equal Access to Equivalent Samples (CREATE) Act -- another area in which Vizient served as a proactive advocate. This legislation prevented brand name drug manufacturers from using tactics that slow the development and entry of new, lower cost generic drugs into the marketplace.

Identifying the impact of shortages on pediatric care

Along with many of these advocacy efforts, the leaders at Vizient have known that collaboration and transparency across supply chain stakeholders are key to progress in ending drug shortages. The [Pediatric Drug Shortages Project \(PDSP\)](#) is the result of a collaboration between Vizient and Children's Hospital Association (CHA), in which CHA sought Vizient thought leadership and data insights to investigate the impact of drug shortages on pediatric hospitals across the U.S., with the goal of enhancing awareness and resiliency of these drug products.



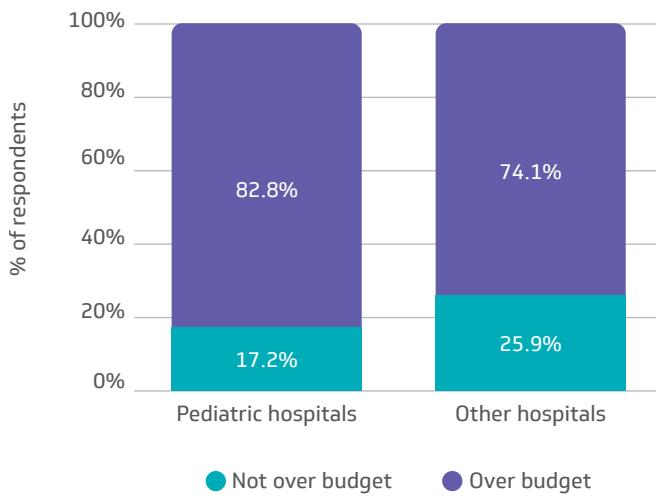
Top five drug categories affected by shortages were:

1. Controlled substances
2. Local anesthetics
3. Emergency syringes
4. Antibiotics
5. Electrolytes

Source: 2019 Vizient Drug Shortage and Labor Cost report

Vizient data was utilized to identify drugs of interest to pediatric hospitals. Many drug shortages that impacted pediatric hospitals were not indicated in short supply in standard drug lists. Vizient has been dedicated to monitoring these drugs based on key metrics, including supply and demand, number of manufacturers, fill rates and price performance. CHA members provided firsthand knowledge about the impact of drug shortages on labor, budgets and patient safety, as well as the unique strategies they use to mitigate this impact. Vizient also reviewed comparative data between CHA hospitals and other hospital types that responded to the Drug Shortages and Labor Cost Report. The result was the identification and on-demand monitoring of key drugs that, if a shortage were to occur, would disproportionately impact pediatric hospitals. While not statistically significant, a greater percentage of pediatric hospital respondents stated that drug shortages caused them to be over budget relative to non-pediatric organizations.

Manufacturer price increases



Source: Vizient member and Children's Hospital Association data⁴

Defining mitigation strategies and alternatives treatments

As a result of Hurricane Maria in 2017, the healthcare supply chain industry experienced changes in market conditions for IV drugs and solutions. Vizient led the way in providing insights and helpful information on impacted supplier status and contracted product coverage. To mitigate the impact of this shortage on organizations and patients, Vizient also provided monitoring and updates, worked with contracted suppliers to collect and communicate information and provided helpful tools and resources to assist members in managing supply including a comprehensive IV mitigation guide with conservation strategies and action plan.

These IV strategies were the precursor to more than 35 mitigation strategies that have been developed by the Vizient Center for Pharmacy Practice Excellence today, in

conjunction with the Vizient Clinical Council members and reviewed by pharmacists, to aid in the handling of all types of ongoing drug shortages.

Producing additional supply

Vizient has always been committed to a singular mission – ending drug shortages. While advocacy, drug monitoring and mitigation strategies aided in the management and reduction in impact of drug shortages, a direct way to truly eradicate the issue of drug shortages has been to create and drive more supply into the market. In November 2019, Vizient launched an agreement with Fresenius Kabi to supply six critical care drugs under Vizient's successful Novaplus private label pharmacy program. This included propofol as well as five additional acute, life-saving drugs: protamine, phenylephrine, oxytocin, thiamine and magnesium sulfate. This new solution was designed to significantly increase inventory while also providing more predictability, sustainability, transparency and resiliency.

With market insights and identification of essential medications as the foundation, our Vizient drug shortage strategies **drive additional supply into the market** and **ensure consistent access to the life-saving treatments.**

The identification of these essential medications became the cornerstone for the Vizient strategy moving forward. By January 2020, with the addition of another key supplier into the newly launched Novaplus Enhanced Supply program, Vizient members collectively were given access to 31 million units of additional essential medications, based on their total historical purchases of these critical drugs.



In January 2020, Vizient published what is now the **Essential Medications Review** and makes this updated report available to all industry stakeholders quarterly. This report identifies essential medications where, if not available, would affect a hospital's ability to provide high-quality patient care.

The report addresses multiple categories, including:

- Acute care, life-saving (no alternatives)
- Chronic care (no alternatives)
- High-impact drugs
- Pediatric care
- COVID-19 treatment

⁴ Pediatric Drug Shortage Trends and Best Practices for Mitigation Strategies. Vizient and Children's Hospital Association. 2020.

Supply assurance during the COVID-19 pandemic

Launch of Novaplus Enhanced Supply program

Transparency and predictability are also foundational elements of the Novaplus Enhanced Supply program, a key sourcing strategy based on the identification of essential medications. Vizient collaborated with contracted suppliers of essential medications that were identified through the program to uncover current API sources and manufacturing locations for contracted drugs included the Vizient Essential Medications list. They also identified capacity to service the current contracted customers for these products for six to nine months and assessed any immediate supply challenges. Suppliers are also asked to manufacture up to six months of additional pooled inventory of product, based on members' total historical purchases, which they agree to warehouse in the U.S. This is in addition to the product that is already shipped to members via full line wholesale distribution channels. Finally, suppliers of these drugs are asked to adhere to stringent failure-to-supply terms to ensure additional member protection from drug shortages.

These programs are successful today because of the value of supplier partnerships. Vizient drives this level of supplier commitment through a) scale of membership b) member commitment c) ease of access during a shortage and production of finished dose products in the U.S.



Novaplus Enhanced Supply:
Triple growth in two-year period

100+ Million
units essential medicines

360+
NDCs

Unprecedented demand tests supply assurance

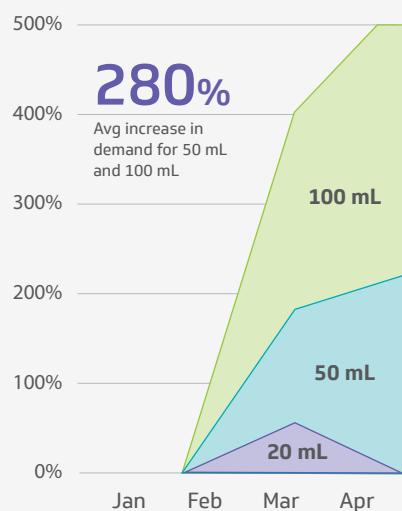
The Novaplus Enhanced Supply program was very quickly put to the test with the onset of the COVID-19 pandemic. By March-April 2020, when very little was still known about the COVID-19 virus, along with sicker patients being put on ventilators, were increasing exponentially.

The 50 mL and 100 mL presentations of the drug propofol are typically used to support patients on ventilators. The demand for these NDCs increased over 280% in just a matter of weeks during this time. Because Vizient already had suppliers on contract through the Novaplus Enhanced Supply program, the production of additional inventory of these essential medications was already established. Vizient members were able to access 676,000 additional units of the drug, which equaled more than two months of additional supply.

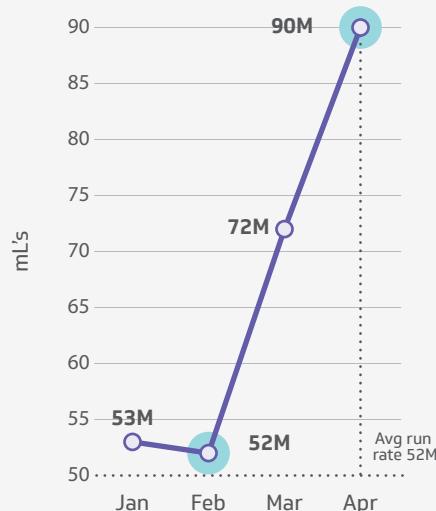
Member access to protected units of propofol

Despite demand shifts and surge, the Novaplus Enhanced Supply program provided significant additional inventory to Vizient members during the peak of COVID-19 critical care cases.

Demand shifted



Supply increased



Members still protected



Source: Vizient supplier data

Through robust pharmacy analytics and insights across all types of spend, Vizient was also able to support members and key stakeholders through fill rate monitoring of these essential medications. As Vizient saw demand for other ventilation medications increase, they were able to focus on key advocacy steps and collaboration to ensure access to these drugs.

The role of collaboration and transparency

Vizient first provided recommendations to the FDA that included:

- Taking steps to expand access to medications associated with ventilator use, including approving new lines of manufacturing or facilities that can make these critical drugs.
- Providing flexibility to other suppliers by allowing them to produce any essential medications regardless of their current stocking status
- Working with other government entities, wholesale distributors and hospitals to identify allocation strategies that better match current and future demands as COVID-19 spreads across the U.S.

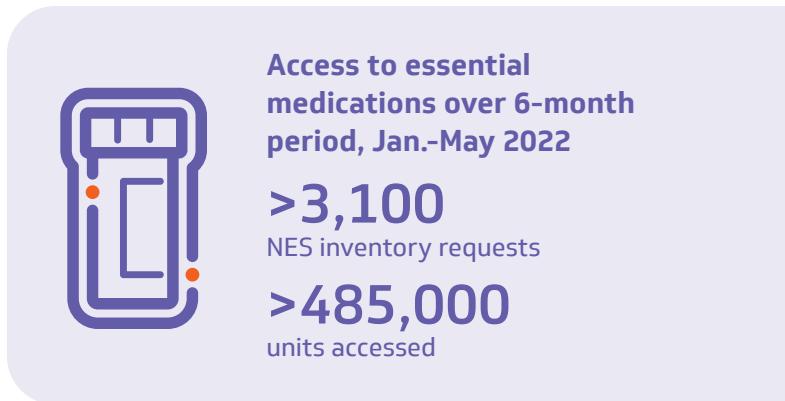
Next, Vizient partnered with member hospitals and health systems to predict the need for medications used to support ventilated patients. Utilizing a predictive calculator, Vizient validated the correct number of purchases and estimated needs for a four-week period by total drug class and specific drugs.

Finally, Vizient partnered with manufacturers of sterile products, including 503B registered compounding suppliers, to access key ventilator medication drugs, such as midazolam and fentanyl.

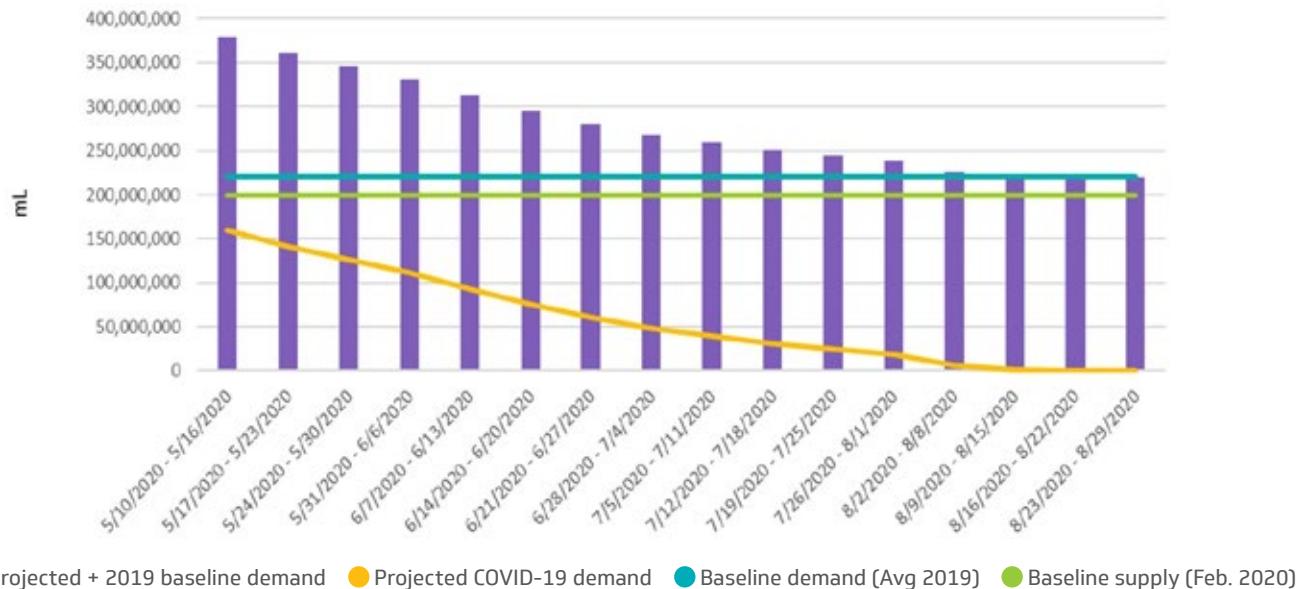
Leaning into previous lessons learned during Hurricane Maria, Vizient also prioritized supplier collaboration and transparency. Due to Vizient's visibility into the majority of U.S. pharmaceutical spend, the team was able to provide transparency into spend and fill rates of the total market supply. These insights were used to support prioritizing allocations. This visibility also provided a clear view of the current health system and hospital needs and future predictability as hospitals quickly worked to expand and open field hospitals. This transparency was also key to decreasing or alleviating anticipatory buying, so that hospitals with the most need were receiving the right products at the right time.

Defining the next generation of supply assurance

While unprecedented, the pandemic accelerated the need for transparency with suppliers, policymakers and other stakeholders across the pharmaceutical supply chain that perhaps would have taken years to achieve otherwise. Today, in collaboration with our members, supplier partners and key stakeholders, Vizient continues to make progress in both managing and ending drug shortages.



Baseline demand vs. projected demand of ventilation medication drugs, May 10-Aug. 29, 2020



Source: Vizient data

Enhanced commitment; enhanced access

Supplier partnership continues to be the foundation for achieving resiliency and providing supply assurance. By prioritizing essential medications, Vizient is able to identify and build programs with suppliers who are committed to providing long-term, stable and high quality supply. Because of the scale of membership, these commitments benefit the supplier as well as the health systems and hospitals, given the ability to predict usage needs.

In just a 9-month period, Vizient members requested and received over 280,000 additional patient doses of essential medications through the Novaplus Enhanced Supply program, a pooled inventory, in a timely manner as this inventory was warehoused in the U.S. by our supply partners. Members have confidence in suppliers being able to meet purchasing commitments and in knowing the product is available at the time that they need it.

Looking to the future, Vizient has also announced the launch of the next generation of supply resiliency for essential medications – the NES Reserve program. As an extension of the Novaplus Enhanced Supply program, NES Reserve allows for higher commitment by the member, dedicated inventory access and additional incremental value on top of what is already received through Novaplus Enhanced Supply. For participating suppliers, that higher commitment is also showcased through both a quality attestation and additional failure to supply terms that provide protection from the indirect costs incurred from managing drug shortages.

Utilizing transparency to identify risk

Visibility into quality, reliability of access and manufacturing locations are all key tenets of how transparency is being defined today, and supply chain stakeholders are coming together – more than ever – in the spirit of this transparency to end drug shortages.

In 2021, Vizient, U.S. Pharmacopeia (USP) and Angels for Change, a patient advocacy group dedicated to ending drug shortages, came together to identify supply risk factors, sharing key data points to create a new model by providing a scientifically and statistically substantiated review of the attributes that are often associated with shortages. It showed the important role of data and transparency across supply chain partners in order to gain visibility into where we can collectively begin to address and alleviate those factors that lead to shortages.

The [study](#) reviewed 18 pediatric oncology drugs that are often most vulnerable to supply disruption. Supply resilience scores applied to each drug in this study revealed that these essential pediatric oncology drugs are 90% more likely to have a shortage event than the average generic drug.

The study highlighted four key findings:

#1: Injectables with lower prices have more vulnerable supply chains: In the study, of the injectable drug products below \$10/unit, nearly 60% have a recent shortage record. In addition, it was noted that importance of pricing, balanced with quality, to ensure both manufacturing commitment and better outcomes. While manufacturers must be incented to invest in production, they are often not recognized or rewarded for quality management.

#2: Greater geographic concentration decreases supply chain resilience: The study revealed examples where, if a drug has a higher concentration of manufacturing in a specific geographic area (i.e. India), this lack of geographic diversity decreased the supply chain resilience.

#3: Drugs with higher manufacturing complexity are more vulnerable to supply disruptions: There were higher shortages with products that had complex dosage forms, such as sterile injectables, and complex manufacturing process – in the case of this study, lyophilization (dehydration process).

#4: Quality failures increase supply chain vulnerability: While quality issues did not significantly impact essential pediatric oncology drugs, individual quality events have impacted the availability of some specific drugs.

Beyond shortages: addressing other obstacles to life-saving drugs

In addition to the identification of essential medications that are at risk of short supply, it's imperative to remove other barriers that limit and/or delay access medications and can disrupt continuity of care. Beyond the manufacturing and quality issues of essential, usually generic/multisource drugs, strategies by payers to limit their financial exposure for high cost, branded drugs, have created an entirely new level of access challenges.

Health systems and hospitals today are faced with payer-mandated policies – often at the regional and state level – that require the practice of “white bagging” to access therapies that are typically provided. White bagging commonly occurs when insurance companies make coverage of needed patient-specific medications contingent on the medication being distributed from a third party specialty pharmacy versus allowing providers to buy and then bill for the medication and its administration. Provider flexibility and autonomy is critical in providing needed safeguards to more effectively coordinate care, ensure the safety of the product and provide for optimal medication use.

In a 2021 [survey](#) on the impact of white bagging, Vizient revealed that U.S. hospitals spent an estimated \$310 million in labor costs alone to manage the additional clinical, operational and patient care work needed to manage white bagging in order to prevent negative patient and financial

outcomes due to delayed receipt of medication delivery, white bagged medications being delivered to the wrong address and the medications no longer being appropriate due to treatment course changes.

To drive supply assurance and minimize treatment delays, health system pharmacy leaders should elevate the awareness of this impact to their financial and managed care leaders, addressing that it's not just a pharmacy challenge, but an impact to the totality of care for the patient. Availability of critical drugs is not simply a matter of quality manufacturing but extends to all processes that affect the ability to provide effective treatment with our access barriers.

Advocating together for better access to life-saving medications

As this report shows, Vizient has been advocating to mitigate and end supply disruptions, especially drug shortages, for many years, with significant partnerships and milestones along the journey. But the action of just a few organizations is not enough. Most recently, Vizient established the End Drug Shortage Alliance, and has invited all key stakeholders across the pharmacy supply chain – more than 80 to date – to join and lead the Alliance with the collective mission to end drug shortages by focusing on transparency and redundancy, quality and the production of additional supply.

Current members represent:

- The leading health systems in the U.S.
- Regional health systems and hospitals
- The top two leading pharmacist associations in the U.S.
- Patient advocacy groups
- Supplier partners, including the top two generic injectable manufacturers
- Wholesale distributors
- Other supply-related organizations
- Other industry stakeholders and leaders

These organizations have a collective goal of achieving:

- Stability and redundancy through uninterrupted access to high-quality, essential medications and the ability to better predict and avert potential supply disruption
- Sustainability by ensuring financial confidence across supply chain partners to support enduring manufacturing capacity
- High-quality patient care by providing redundancy of medications and dosage forms for patient care

While we do not know what the future holds, we now have multiple stakeholders, with multiple views and incentives, aligned to work together – through transparency and

commitment – to ensure no provider is left without the pathways to deliver high quality care, and no patient is left without treatment needed to sustain life.

Already, the Alliance is coming together to drive both transparency and action. When pharmaceutical supplier, Teva, recently announced the closure of its Irving, Calif. manufacturing plant, Vizient supported the Alliance in the development of a [Drug Shortage Stewardship Overview](#) of the drugs manufactured at this facility, including a market analysis, recommendations and abbreviated mitigation strategies to support all entities of the supply chain.

Where do we go next?

What can you do individually and collectively to drive change and end drug shortages? No matter the role of your organization in the supply chain, the answer is simple: Act!

1. Encourage your organization to join the End Drug Shortages Alliance and make a difference with supply chain assurance.
2. Support investment in building additional manufacturing capacity/inventory of these essential drugs.
3. Request and share quality data across all stakeholders.

The last 30 years have seen tremendous progress in the identification and management of drug shortages through innovative sourcing solutions, predictive modeling and sharing of key data. But this is just the beginning. With AI-enabled technologies, more focus on quality and the elevated financial impact, Vizient is prepared to continue to do our part, alongside our members, supplier partners and all participating organizations of the Alliance, to end all drug shortages altogether, and to advocate an end to all barriers that compromise patient care.

Join the End Drug Shortages Alliance.

www.enddrugshortages.com

Vision

To end drug shortages through ensuring access to essential medications and improving quality of life for patients that rely on these medications.

Mission

An alliance of health system, supply chain, industry and other stakeholders dedicated to solving pharmaceutical supply challenges by collaborating to increase visibility and access. Collectively we will end drug shortages through focus on transparency, communication, quality, redundancy and production of additional supply to achieve measurable and sustainable results.



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For more information on Vizient supply assurance solutions for pharmaceutical products, contact your Vizient representative or go to vizientinc.com

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