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Beyond the shortage: The hidden cost of drug supply chain disruptions

June 2025

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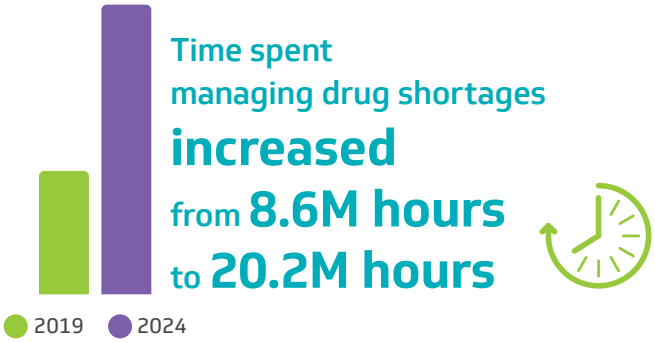
Executive summary

The **2024 Vizient drug shortages survey** reveals a stark reality: Drug shortages continue to disrupt healthcare nationwide, with challenges intensifying since the 2019 survey. Staffing burdens have surged, demanding more time and resources, especially in pediatric facilities, to simply navigate drug shortages daily. In 2024, hospitals across the U.S. reported spending a staggering **20 million hours annually** managing these shortages, racking up nearly $900 million in associated costs—more than double the labor impact reported in 2019. To cope, most facilities shifted workloads onto already stretched staff, while only a fraction opted to hire additional pharmacy personnel. These findings underscore an urgent issue: Drug shortages aren't just about supply—they're draining time, money and an already fragile healthcare system.

The 2024 survey results show the continuing financial problems caused by drug shortages, such as increased hospital budgets and labor costs. With 74% of facilities reporting budget overruns—nearly identical to the 75% reported in Vizient's 2019 survey—it seems that there has been no measurable economic improvement. There was a significant increase in labor costs related to managing drug shortages, rising from $359 million to $894 million between 2019 and 2024. Pediatric facilities have faced the greatest financial and labor strain.

The survey also emphasizes the need for better financial tracking. Particularly for indirect costs from drug shortages, like delays in patient care and longer hospital stays. Additionally, relying on secondary distributors for essential medications has led to an average price increase of about 214% compared to primary distributors, which greatly increases the financial burden.



Communication gaps were identified as a significant challenge in managing drug shortages. Many respondents emphasized the need for earlier and more transparent notifications, as well as accurate product release dates. These improvements would enable better planning and resource allocation, reducing the negative impact on patient care. Respondents also noted that antineoplastic agents and emergency medications are the hardest to get during shortages. They highlighted the importance of ensuring reliable access to essential medications.

> "NES and specifically the NES Reserve Program is an integral part of our inventory management process. We believe the only long-term strategy to stabilize the Vanderbilt drug supply chain is through commitments from us to the supplier, the supplier to Vanderbilt, and sufficient inventory on the shelf to overcome temporary disruptions. NES Reserve gives us the ideal platform to meet all three of these goals while also providing pricing benefits through our Vizient contracts."
>
> **Michael D. O'Neal, DPh, MBA**
> Senior Director – Pharmacy Supply Chain
> Vanderbilt University Medical Center

All facilities reported experiencing disruptions to patient care due to drug shortages. This affected various clinical areas, with outpatient infusion services experiencing the most significant disruptions to patient care with a staggering 41% of all cases impacted or delayed. Over the next 10 years, the number of patients using ambulatory service lines will increase by 17%.[1] This alarming trend shows the real effects of shortages on the quality and continuity of patient care.

While significant challenges remain, it's important to understand and acknowledge the success of efforts to bring stability and resiliency to this market. In addition to the endurance and resilience of pharmacists, technicians, nurses and other providers, Vizient remains committed to supply assurance strategies that significantly and positively limit the effects of drug shortages. Through efforts like the Novaplus Enhanced Supply (NES) and Novaplus Enhanced Supply Reserve (NES-R) programs, Vizient clients have gained access to a growing reserve of manufacturer inventory of critical medications. Since 2021, the program has supported the supply of over 4 million additional accessed units across more than 200 high-impact critical molecules, including many frequently reported in shortage. This expanded access has played a vital role in improving medication availability, maintaining continuity of care and reinforcing resiliency across the supply chain. As the updated metrics show, there are still significant fragilities in the market. While positive changes have been made, Vizient will continue to grow and enhance strategies to ensure a stable supply of essential medications is always available to deliver high-quality patient care.

Background

Drug shortages in the U.S. are no longer an unfamiliar phenomenon and continue to rise, reaching an all-time high in recent years. The ongoing problem of drug shortages also has been highlighted by organizations such as the American Society of Health-System Pharmacists (ASHP) and the Institute for Safe Medication Practices (ISMP). According to ASHP, drug shortages in the U.S. reached a record high in the first quarter of 2024, with 323 active shortages, surpassing the previous peak of 320 in 2014.[2] As of February 2025, there were 235 active drug shortages, with a cumulative total of 1,481 shortages over the past 10 years.[3] Alarmingly, 50% of the active shortages have persisted for two or more years.[4] In fact, the July 2023 ISMP survey on Drug, Supply and Equipment Shortages revealed that shortages continue to be a daily struggle, affecting more critical drugs that lacked suitable alternatives and lasting longer than in the past.[5]

Managing shortages has become an ongoing and labor-intensive process that further stretches already limited resources and tight margins. In 2019, the Vizient Drug Shortages Task Force conducted a client survey covering the period from July through December 2018. The responses confirmed that drug shortages increase resource pressures from labor to finances across all types of care facilities, taking a significant toll on health-system pharmacies. These shortages resulted in a staggering $359 million in financial implications and an additional 8.6 million hours of pharmacy labor annually in managing shortages.[6] Five years later, an enhanced survey was sent to Vizient clients to assess how the drug shortage landscape has changed.

The 2024 survey was conducted from April through September 2024. It focused on the period of January through December 2023 (see Appendix for more details). A total of 132 respondents provided their insights on how drug shortages have impacted their facilities and patient care. The survey results show many of the problems identified in the 2019 survey continue to persist while several challenges intensified.

In this report, findings are presented by referencing the following cohorts:

- **Overall** (including all facilities)
- **Pediatric facilities** (self-identified as pediatric) versus **General facilities** (non-pediatric facilities)

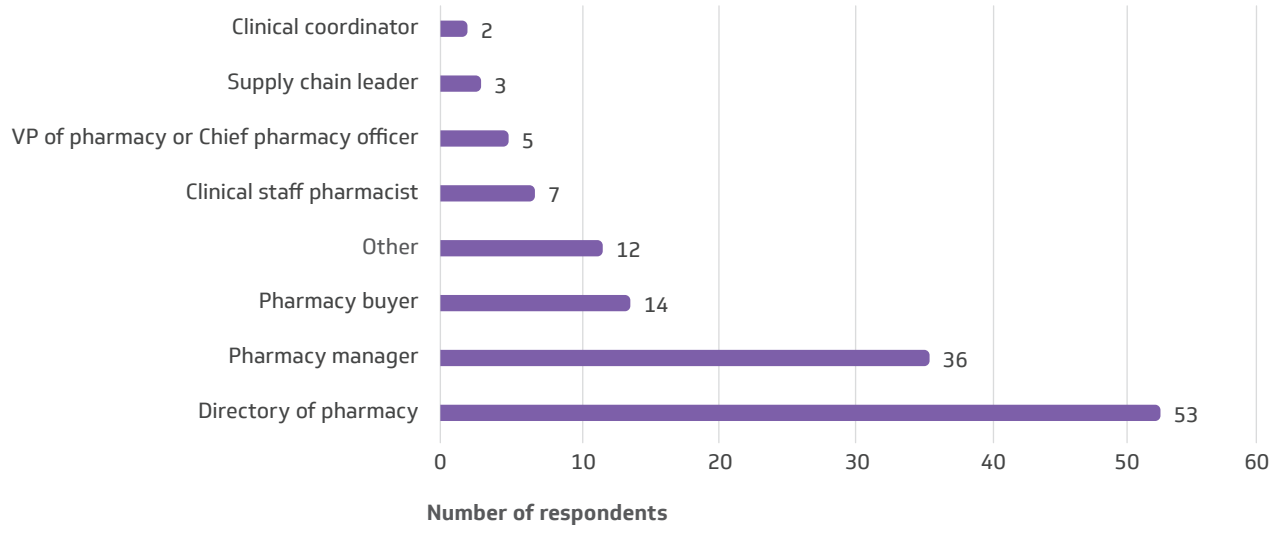
Results

Survey participants

The 132 responses came from a wide range of hospitals, clinics and other healthcare facilities. These include health systems, medical centers, children's hospitals, small to large-sized hospitals, critical access hospitals, specialty hospitals and ambulatory care facilities. Of these, 73% (97) came from individual facilities, while 27% (35) were from health systems.

Most survey respondents held leadership positions within the pharmacy and procurement departments (Figure 1). Directors of pharmacy were the most common role, accounting for 40% of respondents

Figure 1. Participant category



Characteristics of drug shortages

Number of monitored drug shortages

Table 1 summarizes the number of drug shortages monitored internally by different facility types in the 2024 survey. Overall, hospitals were monitoring an average of 43 drug shortages at the time of answering the survey and a maximum of 70 during 2023.

Pediatric facilities monitored at least 25% more shortages than general facilities. Pediatrics require a broader range of medications that are often prone to shortages. Examples include specialty drugs for rare conditions, chemotherapy agents, critical care medications and pediatric-specific formulations. With the high risk and complexity of pediatric populations coupled with treatment often requiring a mix of both adult-approved drugs and pediatric-approved drugs, pediatric facilities disproportionately monitor more shortages and manage inventory at any given time versus non-pediatric facilities.

Table 1. Number of shortages experienced by responding hospitals in the 2024 survey

Cohort	Overall (n=132)	Pediatric facilities (n=40)	General facilities (n=92)
Active number of shortages monitored by respondents during survey period			
Median	43	50	38
Maximum number of drug shortages monitored in 2023			
Median	70	84	67

Top drug classes and drugs with the highest impact on facilities

All 132 facilities responding to the survey highlighted various drugs that were often in shortage, with the top 10 drugs listed in Table 2.

Table 2. Top classes of drugs with the highest impact on facilities

Rank	Drug class (specific drug(s) noted)
1	Antineoplastics (cisplatin, carboplatin)
2	Benzodiazepines (lorazepam, diazepam)
3	Local anesthetics (bupivacaine, lidocaine)
4	Opioids (hydromorphone)
5	Replacement preparations (sodium bicarbonate)
6	Caloric agents (dextrose syringes)
7	Alpha- and beta-adrenergic agonists (epinephrine)
8	Non-barbiturates (ketamine)
9	Selective beta-2-adrenergic agonists (albuterol)
10	Antivirals (acyclovir)

Source: 2024 Vizient Drug Shortages Survey respondents

As shown in Table 3, Lorazepam injectables were the most frequently reported drug with the highest impact for both general and pediatric facilities. Oncology agents, such as cisplatin, carboplatin and etoposide for general facilities and methotrexate and topotecan for pediatric facilities were also reported. General facilities reported more "crash cart" medications such as dextrose, sodium bicarbonate and epinephrine syringes.

Notably, 85% of the high-impact drugs cited in the table above, such as bupivacaine with epinephrine and sodium bicarbonate, are included in the Vizient NES program. Since 2023, the program has provided Vizient clients with access to over 4 million additional supply units of manufacturer inventory, including more than 750,000 units of products identified in Table 3 as having the highest impact on health systems. Vizient facilitates this support through its programmatic infrastructure, without directly engaging in the storage or distribution of these medications.

Table 3. Top 10 reported drugs with the highest impact by facility type

Rank	Overall facilities	General facilities	Pediatric facilities
1	Lorazepam injection	Lorazepam injection	Lorazepam injection
2	Dextrose emergency syringe	Dextrose emergency syringe	Bupivacaine with epinephrine
3	Diazepam injection	Sodium bicarbonate	Methotrexate
4	Ketamine	Epinephrine	Ketamine
5	Epinephrine	Diazepam injection	Hydromorphone
6	Sodium bicarbonate	Ketamine	Albuterol
7	Cisplatin	Cisplatin	Bupivacaine
8	Hydromorphone	Carboplatin	Nalbuphine
9	Carboplatin	Etoposide injection	Diazepam injection
10	Bupivacaine with epinephrine	Lidocaine	Topotecan

Financial impact

Among respondents, 74% exceeded their pharmacy budgets as a direct impact of monitoring and managing drug shortages (Figure 2). This percentage hasn't improved much since the 2019 survey, when 75% of respondents said they went over budget to manage shortages. In the latest survey, 79% of pediatric facilities reported this issue, compared to 72% of general facilities.

Figure 2. Percentage of facilities over budget due to monitoring and managing drug shortages

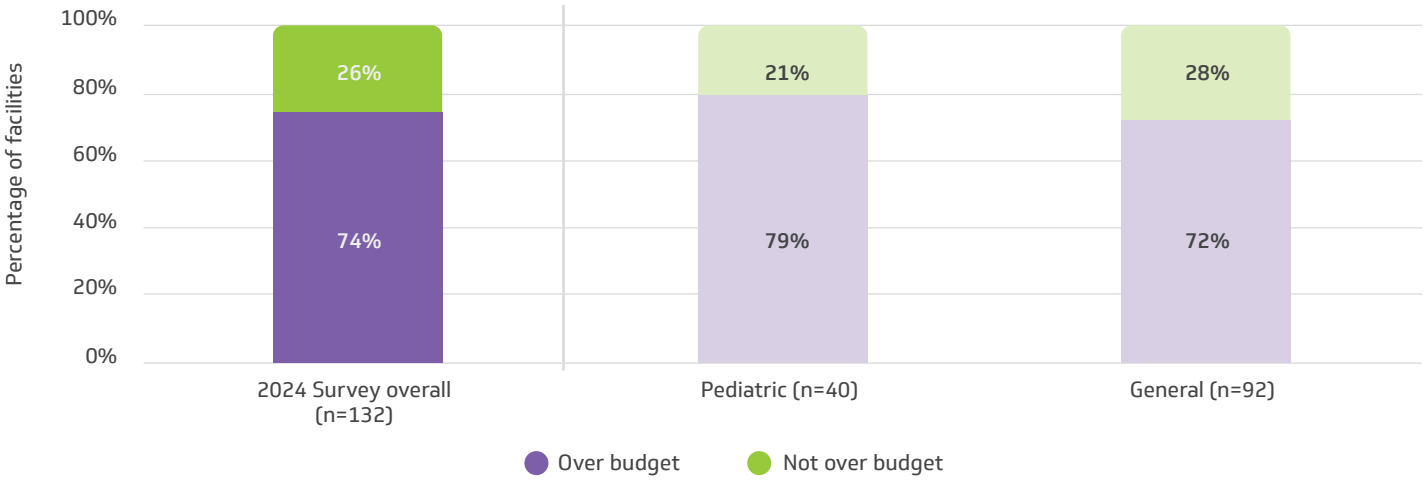


Figure 3 provides a more detailed breakdown of the "over budget" category presented in Figure 2, highlighting the specific ranges of budget overruns. Across all facility types, a significant portion reported being over budget, with most falling within the 1–10% and 11–20% ranges. Notably, pediatric facilities reported a higher percentage of responses in the 21–30% over budget range due to drug shortages (Figure 3).

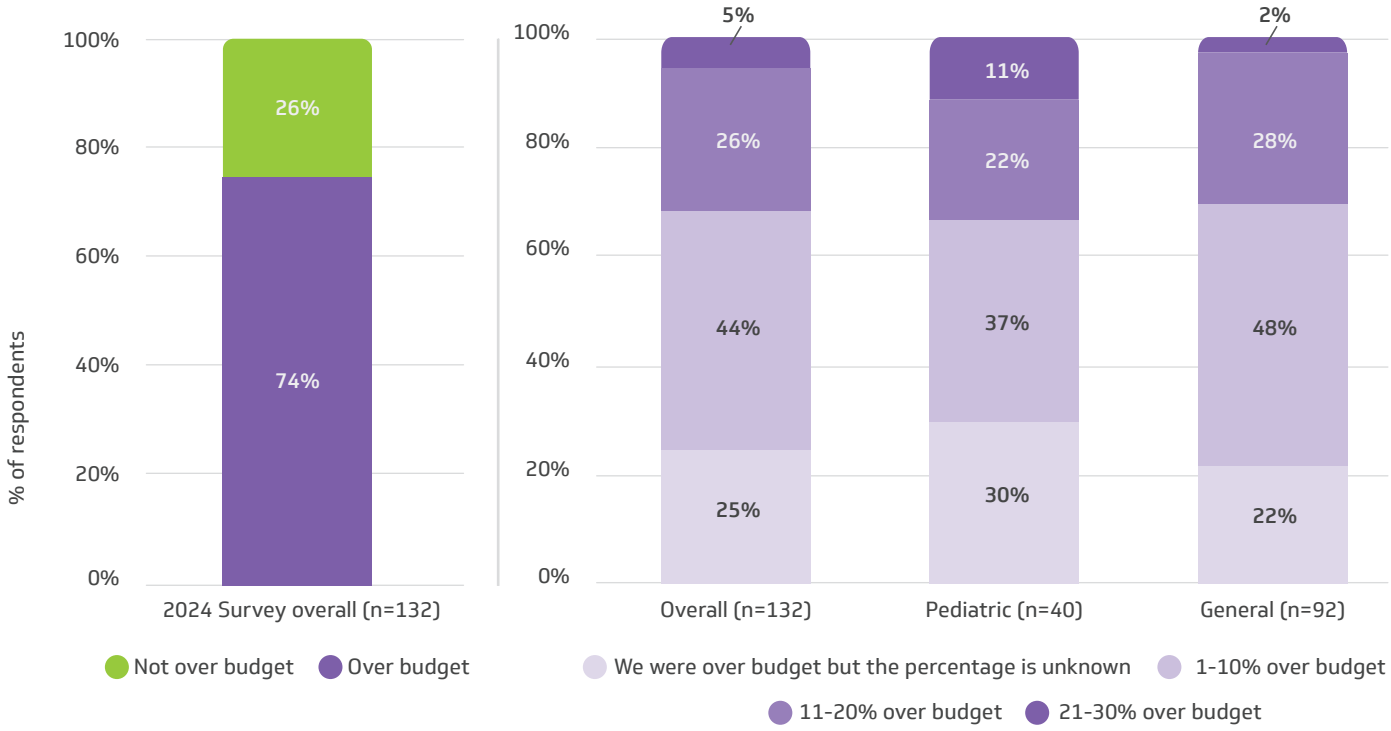
Many facilities reported being over budget but couldn't provide a precise percentage. This highlights the need for better financial tracking systems related to drug shortages. The highest reported budget overrun due to drug shortages was $7 million. This emphasizes the severe financial impact shortages can have on healthcare facilities. The increase in the frequency and number of drug shortages, along with general inflation and higher labor costs, are having an impact across all industries. As a result, provider budgets will continue to be overrun if drug shortages continue to worsen.

As a result, provider budgets will continue to be overrun if drug shortages do not improve. Drug shortages may lead to compromised patient care, delayed treatments and increased healthcare costs. Facilities have to rely on costlier alternatives and resource redistribution. These financial pressures and operational challenges can disrupt overall healthcare delivery. To minimize these impacts, it's crucial to address issues related to drug shortages. This involves diversifying suppliers when possible, improving budget planning and implementing mitigation strategies to ensure quality healthcare can be provided.

To help providers address these financial pressures, Vizient offers strategic solutions through its contracting capabilities and pharmacy programs. Vizient supports providers in reducing financial strain through a suite of contracted programs designed to improve medication access, predictability and cost efficiency. Through the Essential Medications List and Vizient's NES programs, providers can access a price-stabilized inventory of high-need drugs, helping them better manage budgets during periods of volatility. Through proactive contracting, increasing manufacturer inventory of domestically housed product, and streamlining purchasing through preferred channels, NES helps reduce reliance on costly secondary distributors. These programs offer both immediate and long-term financial relief for clients navigating ongoing shortages.

In addition to price stabilization, NES participation helps clients avoid the financial burden of shortages by mitigating labor costs associated with sourcing and managing alternatives and reducing the need for emergency purchasing. Estimated savings include avoided labor hours and inventory carrying costs, such as warehousing. Since 2023, the NES programs have generated nearly $300 million in inventory cost avoidance for participating clients. These programs offer both immediate and long-term financial relief for clients navigating ongoing shortages.

Figure 3. Distribution of budget overruns due to drug shortages (2024 survey)



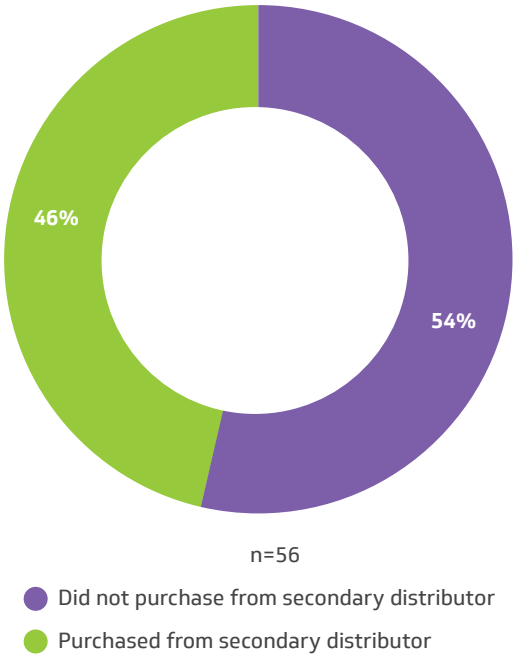
Secondary distributor utilization

The FDA defines the gray market as "[drug] distribution channels not authorized by prescription drug manufacturers."[7] Gray market distributors, or vendors, take advantage of drug shortages by buying medications from secondary sources. They then resell these medications to healthcare providers or other buyers, often at a much higher price. These secondary distributors target prescription drugs that have supply constraints through traditional distribution pathways or are actively on shortage. With the globalized U.S. drug supply chain, it's crucial to exercise caution and be aware of potential risks such as the increased risk of counterfeit or ineffective drugs associated with these types of distributors. During times of shortage, secondary distributors often bring in other suppliers who claim to have an available inventory of a drug that's in short supply. However, verifying the chain of custody, storage conditions and integrity of these products can be challenging.

Among the 56 facilities that provided information regarding their purchases from secondary distributors, almost half (46%) resorted to purchasing at least one molecule from a secondary distributor (Figure 4). The main drugs purchased included cisplatin, carboplatin, fluorouracil and methotrexate. Other drugs listed included etoposide, cyclopentolate, liposomal doxorubicin, sodium bicarbonate, betamethasone, vinblastine, acyclovir, pamidronate and emergency drugs such as epinephrine. Compared to their normal purchasing practices before a drug shortage, facilities that bought medications from secondary distributors reported an average price increase of about 214%. These price increases varied by molecule, with some facilities reporting a 25% increase, while others observed as high as a 600% increase in price.

Secondary distributors add extra pressure to the pharmaceutical supply chain. This can lead to potential patient harm and financial strain on hospital and provider budgets. Healthcare providers should only buy pharmaceuticals from trusted and authorized distributors that follow federal, state and local regulations. They should avoid purchasing prescription drugs from secondary or gray market distributors and vendors. Vizient's NES programs provide safer and more reliable alternatives by offering additional months of onshore inventory warehoused in the U.S. by the manufacturer. This approach ensures product integrity is maintained and mitigates the need for secondary distributor market purchases, which are often associated with increased costs.

Figure 4. Percentage of facilities reporting purchase(s) from a secondary distributor



Source: 2024 Vizient Drug Shortages Survey respondents

Staffing impact

Time spent managing shortages

Across a range of hospital staff positions, time spent managing drug shortages has sharply increased since the 2019 survey. Per general facility, the average amount of time spent managing shortages has doubled for pharmacy staff from 10.5 hours per week in 2019 to 24.2 hours per week per facility in 2024.

Extrapolating the 2024 survey data to all U.S. hospitals shows that the total cost of labor for managing drug shortages was $900 million. The total hours spent managing drug shortages across all hospitals was 20 million hours per year. This is more than double the labor implications since Vizient's previous survey in 2019. The data was extrapolated to an annual U.S. number based on professions, hospital types and number of hospitals in each category.[8,9] The analysis didn't include additional costs from direct purchases and other purchases using non-traditional distribution channels. It also didn't account for the financial impact of delays to patient care and other less quantifiable areas of impact. The effect of drug shortages on staffing and budgets has greatly increased over the past five years. They'll likely continue to grow unless drug shortages significantly decrease.

Figure 5. Average time spent managing drug shortages per week (2024 survey)

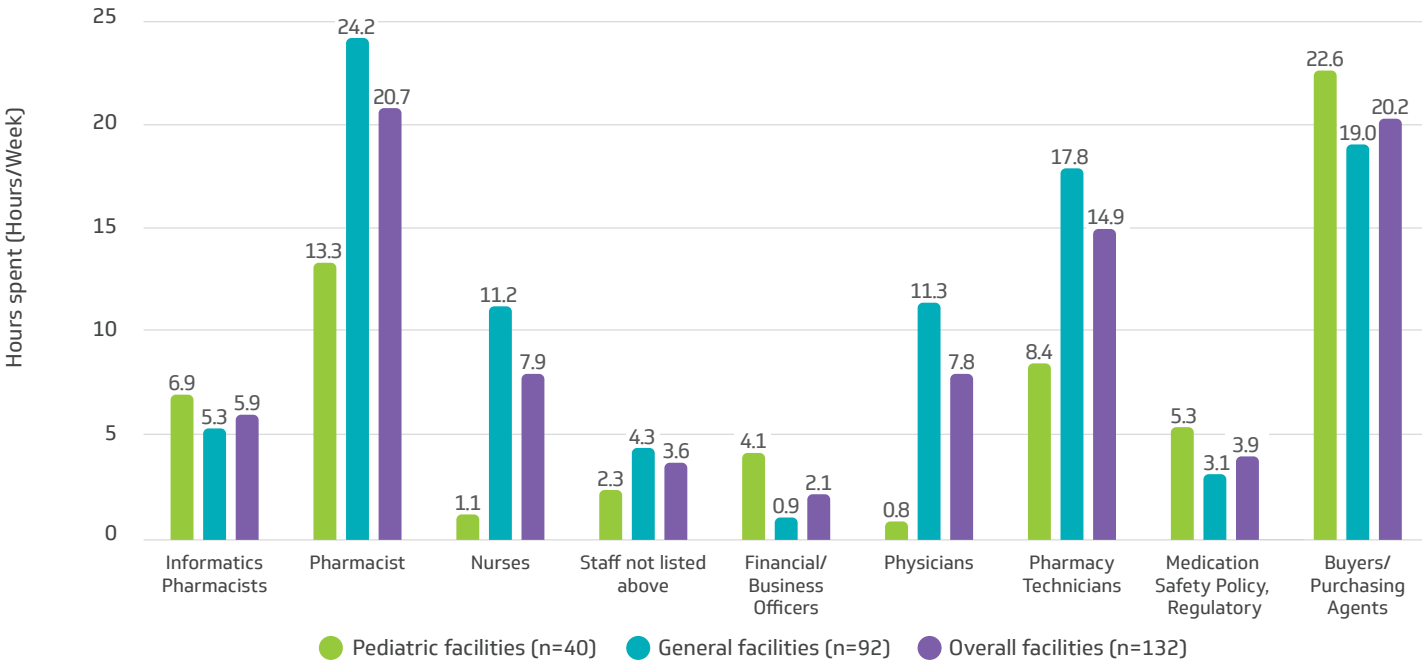
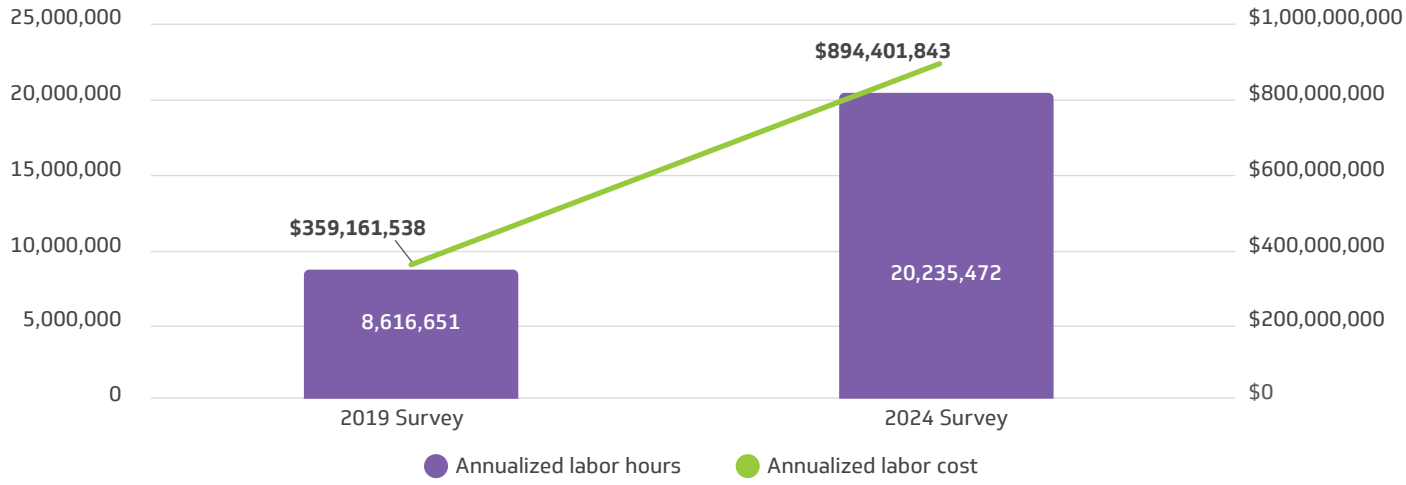


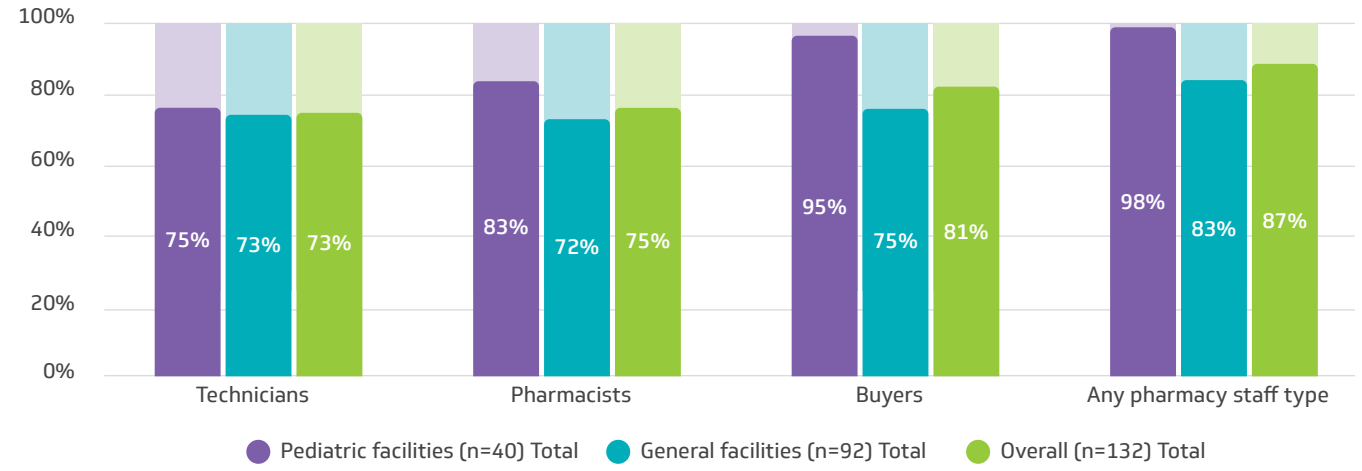
Figure 6. Annualized staffing impact growth from 2019 to 2024 survey



Staffing considerations

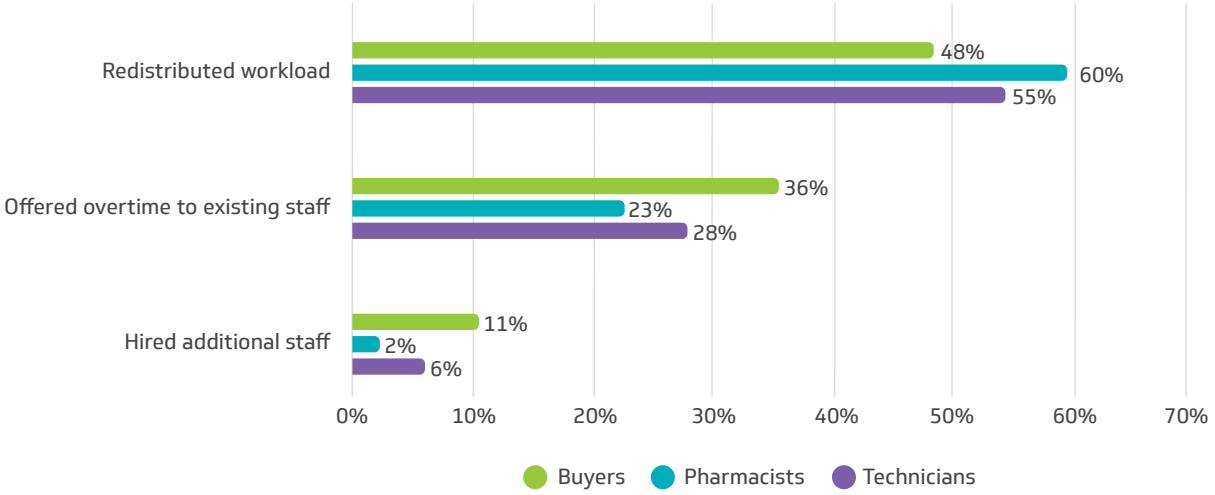
The time and resources dedicated to addressing drug shortages can oftentimes necessitate changes in staff and individual responsibilities. One survey question explored management of pharmacy staff as a mitigation strategy when facing drug shortages. Figure 7 shows the percentage of facilities that changed their pharmacy staffing (technicians, pharmacists and buyers) to mitigate drug shortages. Changes included redistributing the workload, offering overtime and hiring additional staff. Notably, 98% of pediatric facilities reported making staffing changes to address drug shortages. This was a significantly higher percentage than the 83% of general facilities that took similar actions.

Figure 7. Overall percentage of facilities that made pharmacy staffing changes to mitigate drug shortages (2024 survey)



When considering staffing of pharmacy buyers, pharmacists and technicians together, 48 to 60% of facilities who completed the survey said they redistributed workload to existing staff without adding new staff. Additionally, 23 to 36% of respondents indicated they offered overtime to existing staff, and 2 to 11% hired additional staff in these areas to be able to manage the drug shortages (Figure 8). Notably, no facilities indicated furloughing any type of staff during a shortage, and limited facilities reported laying off staff.

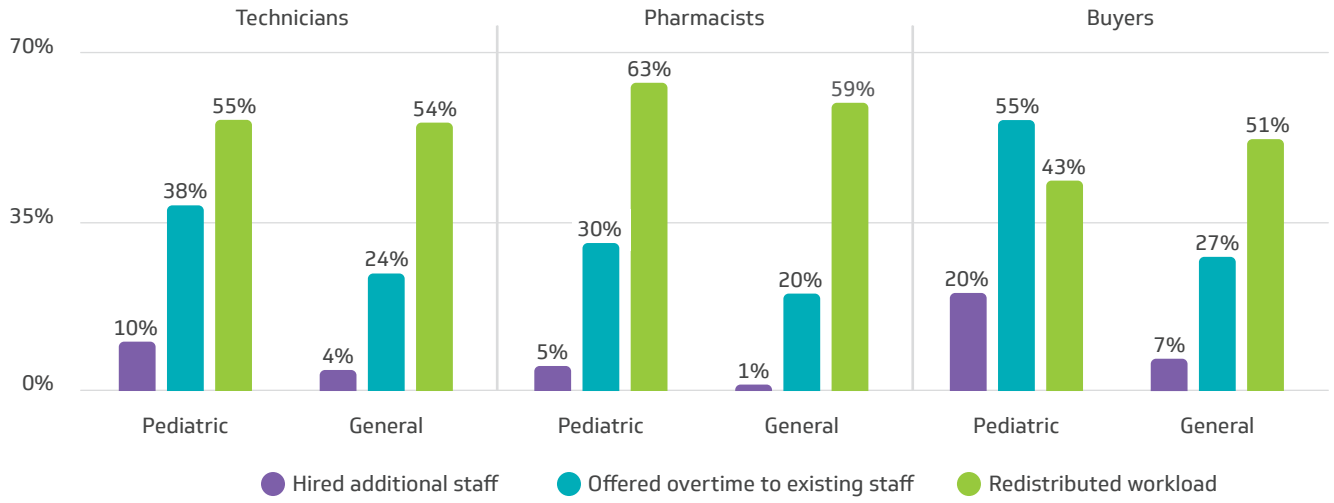
Figure 8. Overall response to additional staffing considerations (n=132)



When separated by type of facility and staff, a majority of survey participants in all categories responded they had to redistribute workload without adding new staff to manage shortages (Figure 9). The one cohort that differed was pediatric facilities. Among respondents, 55% said that they offered overtime to their existing pharmacy buyers. Additionally, pediatric facilities had the highest frequency of responses that stated they hired additional pharmacy buyers to handle shortages (20%). Overall, the results show that higher percentages of pediatric facilities enacted staffing changes compared to general facilities. This indicates that pediatric facilities need to be more responsive and make changes to staffing to be able to mitigate drug shortages.

During a time of shortage, one area of pharmacy workflow that may be contributing to increased staffing needs is compounding. When pre-mixed, ready-to-use products become unavailable, the need to compound intravenous and oral medications can result in increased workload for the pharmacy team. It also increases pharmacy buyer workload to find the appropriate substitutions for each medication, or individual components, needed to be compounded. This additional workload may be more apparent in pediatric facilities than in general facilities, since pediatric facilities already compound specific weight-based doses for pediatric patients.

Figure 9. Additional staffing considerations response breakdown by facility type (general n=92 versus pediatric n=40)



Patient care impact

Medication errors

During a drug shortage, substitutions in product and/or manufacturer can lead to subsequent medication errors for patients. ISMP highlights that hospitals find it extremely challenging to provide safe and appropriate drugs during a shortage. This can result in unsafe practices and compromised care to patients.[5] When facilities were asked about the percentage of medication errors related to drug shortages in the 2024 survey, 43% of respondents identified errors related to drug shortages. This is up from 38% in the 2019 survey. Additionally, 37% of respondents selected “unknown” or “do not track,” which highlights a potential avenue of improvement in tracking drug shortage-related errors. Identifying and reporting medication errors related to drug shortages can be challenging. This is because multiple factors can contribute to any single error. However, improvements in this area may help us better understand the downstream effects of drug shortages. These effects can impact patients throughout the medication-use process.

Disruptions to patient care

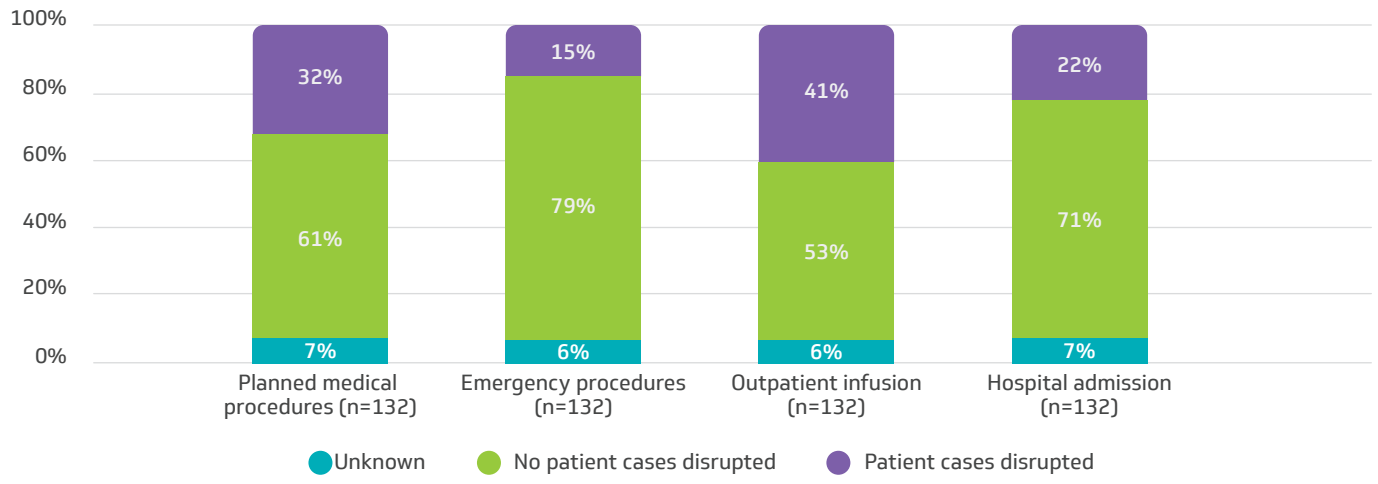
Drug shortages remain a significant concern in healthcare—impacting various aspects of patient care across different settings. In the context of surgery, drug shortages can disrupt vital procedures, leading to delays or modifications in treatment plans. Challenges may arise in promptly providing essential medications during emergency procedures, affecting critical patient outcomes. Outpatient infusions, often required for chronic conditions, may be compromised, jeopardizing continuity of care and patient well-being. Even general hospital admissions can be impacted as shortages may limit the availability of commonly used medications, hindering effective treatment strategies.

The impact of drug shortages was observed across patient cases in various clinical settings. Outpatient infusion services were the most affected, where 41% of patient cases were omitted, missed or delayed. Planned medical procedures were the next most impacted, with disruptions reported in 32% of cases, followed by hospital admissions at 22%. Emergency procedures were the least affected, with disruptions occurring in 15% of cases. These findings are illustrated in Figure 10 below.

Several facilities have implemented effective strategies to mitigate patient case disruptions. These approaches include maintaining a stock of alternative options. They also involve taking proactive measures and collaborating with other entities to acquire medications. Additionally, they involve using alternative treatment or second-line agents and referring patients to other facilities. When necessary, they may also include postponing or rescheduling patient cases.

In addition to facility-level efforts, Vizient provides access to a centralized library of drug shortage mitigation strategies developed through clinical expertise and input from client health systems. These strategies reflect shared patient management practices across organizations and are designed to support providers in making informed, proactive decisions during shortage events. As of this publication, mitigation strategies are available for 63 high-priority medications, representing nearly 20% of Vizient's Essential Medications List including many of the most commonly impacted drugs.

Figure 10. Percentage of patient case disruptions due to drug shortages



Drug shortage resources and strategies

Identification and mitigation resources

Drug shortage identification resources commonly used by respondents included the American Society of Health-System Pharmacists (ASHP), the Food and Drug Administration (FDA), wholesalers and distributors, group purchasing organizations (GPOs), manufacturer communications, 503B offerings and internal systems. Other resources mentioned include professional organizations, industry newsletters and word-of-mouth information from colleagues, peers and buyers.

The majority of survey respondents also pointed to Vizient's assurance programs as valuable resources in addressing shortages. Specifically, the NES programs were cited for their role in maintaining access to critical and emergency-use medications during times when supply through traditional channels was limited. These programs helped facilities continue care and avoid disruption during high-impact shortages.

These resources offer valuable insights into various aspects of drug shortages, including allocation, availability and effective mitigation strategies. Mitigation strategies encompass a wide range of approaches, such as:

- Identifying alternative medication options
- Implementing measures to conserve inventory
- Making operational changes
- Establishing clinical restrictions
- Creating situation, background, assessment, recommendation (SBAR) documents
- Making informed formulary decisions
- Modifying electronic health records (EHR) and storage systems
- Engaging in consultation with key stakeholders
- Fostering collaboration among clinical and operational teams
- Leveraging industry and government recommendations

Mitigation strategies involving technology and novel resources

Survey respondents mentioned a range of technological tools they use for managing drug shortages. They most frequently mentioned platforms that track medication usage, inventory and availability throughout their health systems. Inventory optimization features were also mentioned. These features allow for managing par levels and monitoring expiration dates. They also use predictive analytics to predict future medication needs by leveraging historical and real-time data. Several facilities still take advantage of applications and platforms that provide notetaking, spreadsheet and team collaboration functionalities to document, track and monitor shortages.

Significant gaps or needs regarding assistance for drug shortages

Table 4 highlights several areas where survey respondents believe more assistance is needed to address drug shortages. The gaps include communication, supply management and mitigation strategies. Despite having established channels and tools in place that allow for information sharing, communication issues were identified as the most significant gap. Clients would benefit from earlier and more transparent notification—knowing about specific drug shortages before it's time to order. A more proactive approach to communication from wholesalers and suppliers would enhance their ability to provide optimal patient care.

Table 4. Gaps regarding assistance for drug shortages

Category		Percentage of respondents (n=132)
Communication	Earlier and more transparent notice	33%
	Accurate product release dates	27%
Supply management	Better wholesaler management of allocations	12%
	Increase medication production	17%
	Supply chain and gray market oversight	10%
Mitigation strategies	Shortage management software or predictive modeling	17%
	Resources for mitigation (e.g., labor, time, finances, information)	9%

Regarding supply management, respondents mentioned several areas for improvement, including better management of allocations by wholesalers and an increase in medication production. Additionally, they called for better oversight of the supply chain and secondary distributors. Enhanced strategic and equitable plans for medication allocations, especially those for pediatric drugs, would allow for less disruptions in patient care. Additional oversight over the supply chain would also prevent artificially increased demand during drug shortages, which often exacerbates shortages. Additionally, providers expressed frustration with the interactions with secondary distributors, medication safety concerns and their inflated prices.

Respondents had a variety of potential solutions for mitigation strategies including:

- Shortage management software
- Incorporation of artificial intelligence
- Having more resources, such as dedicated staff to handle drug shortages
- Improved and timely communications and transparency

Several respondents provided actionable suggestions to improve drug shortage management, including the government being more involved in addressing drug shortages. Many have called for the FDA to require manufacturers to provide regular updates with projected timelines for shortage resolution. Others suggested increasing the frequency of drug shortages reports to ensure more timely awareness. Several proposed using distributor and purchasing data to detect early signs of shortages, enabling proactive response planning. Additional ideas included implementing a national system to track drug supply, restricting unauthorized third-party vendors from exacerbating shortages and incentivizing manufacturers to maintain production of critical medications.

Recent advancements by Vizient

Vizient has made substantial strides in recent years to strengthen providers' ability to manage and mitigate drug shortages. These advancements reflect a multi-dimensional approach grounded in data-driven insights, strategic collaboration and the development of forward-thinking frameworks designed to support hospitals and health systems across the country.

A key innovation has been the introduction of drug shortage stewardship—a comprehensive, proactive framework that reframes how drug shortages are addressed both locally and nationally.[10] This stewardship model encourages the formation or enhancement of drug shortage committees, promotes responsible mitigation strategies and discourages inappropriate protective purchasing. It also emphasizes the importance of leveraging regional networks to ensure continued access to medications across communities. This framework supports a cultural shift toward better stewardship of essential medications, empowering systems to evaluate utilization and improve overall access.

To support implementation of these principles, Vizient launched a revamped Essential Medications List in 2024, now enhanced with two critical insight components: demand planning and market resiliency.[11] These features are designed to support data-informed decision-making across the supply chain, enabling providers to anticipate risks and act early. Notably, 60% of the molecules outlined in the updated Essential Medications List are also covered within Vizient's Generic Injectable Program—underscoring a strong alignment between clinical priorities and strategic sourcing efforts.

Vizient also convened a national drug shortages key performance indicator (KPI) workgroup in 2024, bringing together subject matter experts from Vizient and providers to create a standardized set of KPIs.[12] These newly developed metrics help institutions quantify the clinical, operational and financial impact of drug shortages. They provide actionable data for pharmacy leaders and health system executives, aiding in resource allocation and strengthening the case for investing in mitigation infrastructure.

In addition to these initiatives, Vizient has built a strong internal infrastructure to support its clients. Since 2018, the Drug Shortage Mitigation Group, comprised of 11 hospitals and health systems, has provided ongoing advisement on mitigation strategies.[13] Since the 2024 launch of the survey, 23 new mitigation strategies have been developed and added to Vizient's library, bringing the total to 63 available strategies as of this publication. These efforts build on insights gained from the 2019 Vizient Drug Shortages Survey, which first quantified the significant financial and labor burden drug shortages placed on hospitals nationwide. Since then, Vizient has deepened its focus on proactive mitigation, including the Pediatric Drug

Shortages Project developed in collaboration with the Children's Hospital Association (CHA).[14] This project specifically addressed the disproportionate impact drug shortages have on pediatric facilities, which was further validated in the 2024 survey findings. In 2023, Vizient expanded its internal capacity by forming the Shortage Surveillance and Readiness Team, a 20-person group spanning 10 business units. This cross-functional team streamlines surveillance, communication and mitigation efforts, ensuring Vizient is positioned to respond rapidly to emerging shortages.

These efforts are underpinned by Vizient's robust internal data and national client engagement. Since 2021, the NES programs have grown significantly, helping to create additional manufacturer inventory of critical medications and strengthen supply chain resiliency. Among respondents to the 2024 survey, approximately 63% were actively engaged in these programs, underscoring the widespread adoption and alignment with improved access. In parallel, data from the Vizient Advanced Access Hub (VAAH) program between 2023 and 2025 shows a dramatic increase in accessed units of over 5,000%. Notably, bupivacaine/epinephrine, sodium bicarbonate and carboplatin—three high-impact drugs identified in the 2024 survey—have collectively accounted for over 700,000 accessed units since 2023. These medications represent three of the five most accessed products within Vizient's NES programs. This surge in demand was supported by the NES programs, through collaboration with suppliers for the creation of additional supply, reinforcing the tangible, real-world impact of Vizient's mitigation strategies.

Together, these advancements reflect Vizient's commitment to delivering sustainable solutions for drug shortages, combining innovation, analytics and collaboration to create a more resilient and responsive supply chain for the future of healthcare.

Looking ahead, Vizient recognizes the growing need to extend this type of analysis beyond the pharmacy space. Drug shortages continue to challenge other critical areas of care, including medical-surgical supplies and laboratory resources. Understanding how programs like NES Reserve influence the broader healthcare ecosystem is essential to shaping more resilient systems. Vizient is actively exploring opportunities to assess these wider impacts in future analyses, reinforcing a commitment to advancing solutions that support healthcare providers across the continuum of care.

> "The Vizient NES-Reserve program has provided us with an additional tool to help combat the many drug shortages that we continue to face. Our health system has utilized the program to request and access supply of essential medications to continue uninterrupted patient care when there are supply issues through our regular distribution channels. We're excited to continue the partnership and hope to see an expanded list of medications with the NES-Reserve program in the near future."

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Appendix

Methods

A structured methodology was employed to conduct a comprehensive survey on drug shortages. In January 2024, a 23-question survey was developed to capture key insights on the issue. The survey underwent pilot testing by staff and pharmacy leaders to ensure clarity and relevance. In April, the survey was distributed via email to 917 Vizient clients, with multiple reminder emails sent to encourage participation and improve response rates. A final request for incomplete responses was sent in September, before the survey officially closed. The collected data was scrubbed to ensure accuracy and completeness. The analysis phase began in October 2024, where insights were drawn from the cleaned dataset to inform conclusions and recommendations.

Vizient resources

There are several notable initiatives and resources to help Vizient provider customers navigate supply chain challenges:

- Novaplus, the industry's longest-running private label program, provides market-leading financial value to providers. The Novaplus Enhanced Supply (NES) program delivers additional pooled manufacturer inventory of both Novaplus private label and manufacturer-labeled essential medications that are critical to clinicians' ability to provide immediate and high-quality patient care. NES Reserve provides a dedicated manufacturer inventory of these essential medications for participating providers. Like NES, the inventory is stored by participating suppliers in the U.S.[15]
- Drug shortage resources, including drug shortage alerts and mitigation strategies designed to assist providers in managing the clinical, operational and financial challenges of drug shortages.[16]
  - Essential Medications List
  - Drug shortages key performance indicators (KPIs) paper
- Teams, groups, committees and alliances offer an opportunity for collaboration between subject matter experts to address shortages.
  - End Drug Shortages Alliance
  - Shortage Surveillance and Readiness Team
  - Vizient Provider Customer Drug Shortages Mitigation Group

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