vizient®

Protecting high-risk patients from unsafe chemicals in the supply chain

What is the problem?

"A child born today will grow up exposed to more chemicals than a child from any other generation in our nation's history"[1]

Currently there are over 85,000 synthetic chemicals being used in the United States (U.S.), yet only 1% have been tested for safety to human health.[1,2] Many hazardous chemicals are commonly found in most personal care products and cosmetics, packaging and containers, as well as medical supplies and health care equipment. Of the small number of chemicals tested, many are linked to negative impacts on human health and development, such as cancer, endocrine disruption, genetic disruption, immune system disruption, and damage to the brain, lungs, kidneys, liver and reproductive system.[3,4,5]

According to the U.S. Environmental Protection Agency (EPA), contamination from unsafe chemicals is pervasive in society. At particularly high risk to the negative impacts of unsafe chemical exposure are pregnant women, unborn fetuses, infants and young children. The agency reported that babies born in the U.S. today have, on average, more than 280 industrial chemicals and pollutants in their bloodstreams the day they are born.[1] Prenatal and early life exposure to phthalates, for example, is linked to asthma, allergies, and cognitive and neurodevelopmental problems such as hyperactivity, anxiety, depression and aggression.[3,4,5] Phthalates have also proven to disrupt reproductive development in boys.[3,4,5] During pregnancy, chemicals such as lead, mercury, arsenic and cadmium have been shown to cross the placenta and fetal blood-brain barrier and disrupt critical periods of brain development. Triclosan, a common antimicrobial used in toothpaste and hand soap, has been found in the bloodstreams of over 75% of American adults and in nearly all samples of breast milk tested.[6]

"Our results strongly suggest that the health of all children is threatened by trace amounts of hundreds of synthetic chemicals coursing through their bodies from the earliest stages of life..."[7]

Studies have shown that endocrine-disrupting chemicals such as polyfluoroalkyl substances (PFAS) are polluting the bloodstreams of over 95% of American children and 99% of American adults on any given day.[5,6] PFAS have been linked to kidney and testicular cancer, elevated cholesterol, decreased fertility, thyroid problems, and decreased immune response in children.[5,8] Elevated amounts of PFAS in the bloodstream also increase the risk of suffering severe COVID-19 complications.[8,9]

In addition to concerns of unsafe chemical exposure in high-risk patient populations, health care employees are becoming increasingly concerned about risk of exposure to unsafe chemicals during their daily work. A national survey of nurses by the Environmental Working Group suggests links between chemical exposure at work and serious health problems, such as cancer, asthma, miscarriages and birth defects.[10] A report by Physicians for Social Responsibility also found correlations between toxic chemical exposure at work and adverse outcomes, such as reproductive dysfunction, learning and developmental dysfunctions, metabolic syndrome, and cancer.[11]

> *"Nurses ingest, touch or breathe residues of any number of these potentially harmful substances as they care for patients day after day, and face potential but unstudied health problems as a result…"*[12]

Legislation to limit exposure to unsafe chemicals is nothing new. For example, efforts to limit low levels of exposure to lead began in the U.S. in the early 1970s.[12] Since then, many states have begun to recognize the need to improve protection of public health from additional unsafe chemicals. In the last 50 years, 35 states have adopted new legislation aimed at protecting public health from unsafe chemical exposure.[13]

While the number of legislative policies being discussed at the state and national level is growing, many health care organizations (HCOs) are proactively creating their own policies to protect patients and staff from unsafe chemical exposure based on the "do no harm" bioethical principle of medicine. HCOs have found success through adoption of policies to screen unsafe chemicals in the supply chain as both patient and staff safety initiatives, as well as moral and ethical responsibilities. Once educated properly, both patients and staff see the effort to mitigate unsafe chemical exposure as a necessary and protective measure. Despite these efforts, however, multiple studies and research show that legislation and policies alone are having a minimal effect on preventing unsafe chemicals from polluting the bloodstreams of pregnant women, unborn fetuses, infants, young children and adults.

Given the multitude of lifelong negative impacts from unsafe chemical exposure to pregnant women, unborn fetuses, infants and young children, screening unsafe chemicals in the health care supply chain should be prioritized, at a minimum, for high-risk patient care areas. Although many hospitals have safer chemical policies in place, a recent study showed that hazardous chemicals can be found in at least 250 different products being used in the average hospital pediatric care room.[14] Therefore, further steps must be taken to protect high-risk patients from unsafe chemical exposure in health care settings.

For many HCOs, the challenge of screening and removing unsafe chemicals from the health care supply chain is multifold:

- **Lack of industrywide standardization.** Different standards and definitions of chemical safety are used by HCOs nationwide, causing confusion for manufacturers, suppliers and distributors as they try to interpret and adhere to the different standards. Without industrywide standardization and definitions of unsafe chemical levels, many HCOs resort to interpreting hundreds of eco-friendly labels and choosing their own product chemical safety standards independently. What is considered safe by one organization may not be considered safe by another, and suppliers cannot easily customize the chemical composition of each product to fit various HCO standards of safety.
- **Today's methodology is highly manual, unsustainable and not data driven.** Most HCOs rely on staff to "read the fine print" on product boxes or search product descriptions to screen for unsafe chemical information. This approach is both prone to human error and difficult for those charged with maintaining oversight over the tens of thousands of products used annually. Many HCOs are also using outdated, paper-based standards of chemical safety and are not integrating current safer chemical standards with purchasing and inventory data at the product level in real time.

- **Safer chemical information is rarely considered at the product and equipment category levels.** Often when evaluating current products or equipment for potential conversion opportunities, HCOs rely on key stakeholders or a value analysis committee to consider the financial, clinical and operational impacts of their decision-making. Rarely is safer chemical information considered at the product or equipment level due primarily to a lack of efficient information gathering of safer chemical attributes and data-driven analysis.
- **Chemical safety initiatives often are not framed in terms of negative health impact.** Efforts to reduce unsafe chemical exposure in most HCOs are traditionally driven by the chemical name or chemical classification, such as latex-free or diethylhexyl phthalate (DEHP)-free initiatives. This approach often does not motivate executives, physicians and clinicians, nor does it establish a common understanding of the urgent need to remove unsafe chemicals from the supply chain relative to human health impact. HCO staff motivation is improved by reframing safer chemical initiatives in terms of health impact, such as reducing endocrine disruptors, and using terminology directly linked to patient and staff safety and population health improvement goals.
- **Counterfeit products are a major concern. Before the COVID-19 pandemic, it was estimated that 5% to 10% of medical products on the market were either counterfeit or contained at least one counterfeit component.** Since the pandemic started, many HCOs have been challenged by product shortages and pressured to rapidly convert to alternative sources — many of which have never been used. For example, Vizient® — the largest health care performance improvement company in the U.S., composed of 50% of all U.S. hospitals, 95% of all U.S. academic medical centers and over 20% of U.S. ambulatory practices — found that over 95% of new suppliers currently soliciting personal protective equipment (PPE) to U.S. hospitals are not registered with the Food and Drug Administration (FDA) nor the National Institute for Occupational Safety and Health (NIOSH).
- **A return on investment (ROI) is not clear.** Given that most HCOs prioritize their time and resources toward improving patient outcomes, enhancing quality of care and reducing the cost of care, it is difficult for many organizations to dedicate additional time, cost and resources to screen for unsafe chemicals in the supply chain when the task seems insurmountable and ROI is not clear. Identification of conversion opportunities to safer chemical products is currently inefficient and piecemeal, with the financial impact of doing so often dominating the conversation.

This case study has multiple purposes, including to:

- Accelerate efforts to urgently protect high-risk patients — including pregnant women, infants and children — from unsafe chemical exposure in health care settings.
- Improve HCO staff safety.
- Acknowledge and amplify the concern of unsafe chemicals in the health care supply chain.
- Increase transparency into the chemical composition of products used in health care settings.
- Offer an example of a standardized, data-driven, sustainable approach to consistently monitor unsafe chemicals in the supply chain at the organization, facility, department, product category and individual product levels.
- Assist HCOs seeking to adopt a data-driven strategy by standardizing, organizing and consistently monitoring safer chemical information in their supply chain.
- Integrate environmentally preferred (EP) attribute data — including safer chemical and waste reduction information — with purchasing data in real time to screen for unsafe chemicals in the supply chain at the organization, facility, department, product category and individual product levels.
- Reduce unsafe chemical exposure in health care settings, reframing initiatives using health impact terms commonly understood by executives, physicians and clinicians.
- Build confidence with key stakeholders and value analysis committees to consider integrating safer chemical information into their decision-making by forming partnerships and encouraging transparency among suppliers.
- Increase health care supplier efforts to improve transparency, disclosure and innovation to maximize use of safer chemicals in products as both patient and staff safety initiatives.

What makes this approach different?

This case study marks many firsts:

- The first time that a Vizient centralized database of over 600,000 products with standardized EP attribute information was matched to real-time hospital purchasing data to evaluate safer chemical usage in the supply chain at the organization, facility, department, product category and individual product levels.
- The first time that an automated, cost-effective, scalable and sustainable data-driven solution was used to link EP attribute information to real-time health care purchasing data in order to evaluate safer chemical usage in the supply chain at the organization, facility, department, product category and individual product levels.
- The first time that safer chemical information was translated, categorized and evaluated in terms of human health impact to improve education and motivate adoption of safer chemical procurement at the HCO enterprise level.
- The first time that safer chemical information was transparently collected from multiple suppliers at the individual product level and conversion opportunities objectively evaluated to improve patient and staff safety efforts.
- The first time that safer chemical information at the product category and individual product levels was collected, analyzed and prepared for 360-degree value analysis decision-making.
- The first time that a "5-leaf" sustainability rating format was used to visualize sustainability as a quality at the individual product level when considering product conversion opportunities.

What was the methodology?

Note: In collaboration with a 620-bed nonprofit community hospital on the West Coast, Vizient conducted a case study on six product categories of medical supplies actively being used in high-risk patient care areas. The methodology for this case study did not include the exchange of any protected health information.

The methodology for this case study is broken down into three distinct phases:

Phase 1 — Establish a consensus on methodology

Phase 2 — Activate the methodology

Phase 3 — Prepare results for 360-degree value analysis

Phase 1 — Establish a consensus on methodology

- **Identify internal key stakeholders and high-risk patient care areas.** First, the HCO must appoint an initiative champion (or co-champions). Their specific role is to drive the initiative from beginning to end, identify key internal stakeholders in high-risk patient department areas and ensure interdisciplinary communication takes place throughout the initiative. In identifying internal key stakeholders, it is important to categorize staff members who will either be directly involved in making the initiative a success — such as those needed to pull data or compile other vital information — and staff members who are indirectly impacted and should be peripherally aware, such as executive leadership.
- **Identify external key stakeholders to assist on data collection and integration.** For HCOs that are members of a group purchasing organization (GPO) or other aggregation, it is suggested that the HCO first ask their GPO or aggregate if they are collecting EP attribute data for their contracted products.[16] HCOs often submit their purchasing data to GPOs to ensure contract connectivity and to monitor cost reduction opportunities, which includes categorization of products and services such as Vizient product spend categories and/or the United Nations Standard Products and Services Codes (UNSPSC). The HCO initiative champion(s) should contact their GPO client representative and portfolio manager for the product category or categories of interest. If the GPO has a dedicated sustainability resource, they should be included on initial conversations as well. GPOs typically communicate with thousands of suppliers each year and

are well positioned to capture EP attribute information upstream for many products on the market today. For this case study, Vizient served as the GPO to ensure that a standard set of EP attributes was being collected and uniformly applied at the product category and individual product levels. For HCOs that are not part of a GPO, the process of EP data collection from suppliers should take place internally or in collaboration with a credible third party. EP attribute database size, efficient integration of EP attribute and active purchasing data, and ongoing EP attribute data collection from suppliers should be considered when evaluating capabilities of third parties collecting EP attribute information. On the supplier side, the initial point of discussion requesting EP attribute data should be the local supplier or distributor sales representative, with collaboration from the national account manager, product engineers or regulatory affairs.

- **Determine a credible source of robust EP attribute information.** Vizient averages over 2,100 contracts with 1,200 suppliers in 500 different product categories each year, including $155 billion in supply purchase data and over 12 million products in its item master. Therefore, Vizient was identified as being in the best position to collect supplier EP attribute data upstream alongside the HCO that was collecting non-GPO supplier EP data independently. Vizient started collecting EP data in 2011 and enhanced the program in 2017, with a dedicated resource collecting EP attributes as a standard practice for all suppliers bidding for medical and surgical product contracts.[17] Collaborating with a GPO or credible third party prevents the HCO from having to collect EP data independently and suppliers from having to respond to EP data requests from various HCOs using different EP standards and data collection templates.
- **Establish consensus on standardized data fields and definitions, including a template for data collection.** In 2017, Vizient adopted Kaiser Permanente's template of 23 standardized EP attributes and then embedded those attributes within the supplier request for information (RFI) as part of the nonfinancial criteria collected during the national medical and surgical supply contract bid process. In this case study, the Vizient-established RFI template of 23 EP attributes was used to collect EP attribute information at the product category and individual product levels.

Chemical attribute information was collected for the following classifications of chemicals linked to negative human health impacts:

- **Bisphenols:** Bisphenols are present in commonly used plastic products, such as water bottles, food storage containers, packaging, sports equipment, aluminum can liners and cash register receipts. Bisphenols leach from products into food, water and indoor dust.
  - Early life exposure to bisphenol A (BPA) is linked to asthma and neurodevelopmental problems, such as hyperactivity, anxiety, depression and aggression. In adults, BPA is linked to obesity, type 2 diabetes, heart disease, decreased fertility and prostate cancer.[5]
  - A recent study showed that the average level of BPA in American adults is over 40 times higher than previously estimated.[18]
  - Although many products are now labeled "BPA-free," BPA is often replaced with bisphenol S or bisphenol F, which are less studied but appear to have similar hormone-disrupting effects.[5]
- **Polyvinyl chloride (PVC):** PVC is an economical and versatile thermoplastic polymer widely used in the building and construction industry to produce door and window profiles, water pipes, wire and cable insulation, and medical devices. Vinyl chloride is used primarily to make PVC, a hard plastic that is made softer and more flexible with plasticizers — the most widely used being phthalates (e.g., DEHP). Because phthalates are not chemically bound to the plastics they are added to, they continuously leak into food, water or indoor dust.
  - The National Cancer Institute, the EPA, the Agency for Toxic Substances and Disease Registry, and the International Agency for Research on Cancer have determined that vinyl chloride is a known human carcinogen.[19,20,21]
  - Vinyl chloride has been found in the air of communities near vinyl chloride manufacturing and processing plants, hazardous waste sites, and landfills.[22]
- **Phthalates:** Phthalates can be found in plastic products, such as vinyl flooring, shower curtains, toys, plastic wrap, food packaging, containers, glues, caulks, paints, personal care products and air fresheners.

    - Phthalates leach from products into food, water or indoor dust and have been detected in the urine of most humans tested.[5]
    - Prenatal and early life exposure to phthalates is linked to asthma, allergies, and cognitive and behavioral problems, including disruptions to reproductive development in adolescent males.[5,24,22]
- **Antimicrobials:** Antimicrobials are chemicals added to products to kill or inhibit the growth of microbes, such as bacteria. Humans absorb antimicrobials through skin contact and ingest them through indoor dust. Infants are exposed to antimicrobials in utero through maternal exposure and later through breast milk.
    - Antimicrobials are associated with hormone disruption, developmental and reproductive effects, allergen sensitivity, and increased antibiotic resistance.[5]
    - Triclosan, a common antimicrobial used in toothpaste and hand soap, has been found in the bloodstreams of over 75% of American adults and in nearly all samples of breast milk tested.[5]
- **Flame retardants:** Flame retardants are used to slow and prevent the ignition of fire. They continually leak out of products and into indoor dust, which is then inhaled or ingested. Flame retardants have been detected in the bodies of nearly all humans tested.
    - Due to their hand-to-mouth behavior and crawling, infants and toddlers have shown to have the highest levels of flame retardants in their bodies.[5]
    - Flame retardants are linked to lowered IQ and hyperactivity in children, as well as cancer, hormone disruption and decreased fertility in adults.[5]
- **Certain metals:** During pregnancy, certain metals such as lead, mercury, arsenic and cadmium can cross the placenta and fetal blood-brain barrier during critical windows of brain development. Infants can further be exposed to metals through breastfeeding.[7]
    - Lead is linked to high blood pressure, miscarriages, stillbirth, infertility, and decreased kidney and brain function.[5]
    - Mercury and arsenic are linked to adverse effects on the nervous and cardiovascular systems.[5]
    - Cadmium is linked to lung and kidney damage, as well as weakened bones.[5]
- **Perfluorocarbons (PFCs):** Also referred to as per- and polyfluoroalkyl substances (PFAS), these chemicals are used in products for their liquid- and stain-repellent properties. PFAS do not break down in the environment and are absorbed by humans through contaminated food, water or indoor dust.
    - The most studied of these substances is perfluorooctanoic acid (PFOA), a chemical linked to kidney and testicular cancer, elevated cholesterol, decreased fertility, thyroid problems, and decreased immune response to vaccines in children.[5]
    - PFAS can be found in the bloodstreams of over 95% of American children and 99% of American adults.[5,6]

*Note: Although organic solvents are **not** included in the Vizient EP attribute data collection template for medical and surgical supplies, they **are** included in the EP attribute data collection for relevant product categories, such as cleaning solutions.*

- **Link chemical classifications to categories of negative health impact.** For this case study, chemical attribute classifications are linked to the following categories of health impacts (see Table 1 on page 7).
- **Frame the initiative with terminology that will motivate key stakeholders most effectively.** For internal key stakeholders, the HCO initiative champion(s) should frame the initiative around removing unsafe chemicals from the supply chain, resulting in a positive health impact. Acknowledging and emphasizing the growing body of scientific evidence showing widespread contamination of unsafe chemicals in adult and child bloodstreams, the primary motivating factors for the HCO should be to remove unsafe chemicals from the supply chain to improve patient and staff safety, showing commitment to the "do no harm" bioethical principle of medicine. On the supplier side, motivating factors are typically to gain new market share from competitors through identification of HCO product conversion opportunities, as well as strengthening their reputation as a safer chemical and sustainability-driven business partner. Vizient worked to meet the HCO's needs around sustainability goals, providing up-to-date EP attribute information and actively sourcing for safer chemical product alternatives, strengthening value analysis decision-making and supporting the HCO's commitment to the "do no harm" principle.

Table 1: Chemical classification and health impact glossary

Chemical classification	Health impact	Definition
• Natural rubber latex	Allergens	Chemicals linked to inducing allergies or immune system sensitivity
• European Union Restriction of Hazardous Substances (EU RoHS) Directive • PVC • Phthalates • California Proposition 65 chemicals • Flame retardants • Metals	Carcinogens	Chemicals linked to different types of cancer
• EU RoHS Directive • Bisphenols • PVC • Phthalates • California Proposition 65 chemicals • Flame retardants • Metals • Perfluorinated chemicals (PFCs)	Developmental toxins	Chemicals linked to interference with normal growth, differentiation, development, behavior or homeostasis during prenatal development through puberty
• Bisphenols • Phthalates • California Proposition 65 chemicals • Flame retardants • PFCs	Endocrine disruptors	Chemicals linked to interference with the synthesis, secretion, transport, binding, action or elimination of hormones responsible for normal development, behavior and maintenance of cell metabolism
• EU RoHS Directive • PVC • California Proposition 65 chemicals	Genetic disruptors	Chemicals linked to interference with deoxyribonucleic acid (DNA) development or damage to DNA structure
• Phthalates • California Proposition 65 chemicals • Antimicrobial/antibacterial agents • Flame retardants	Immune system disruptors	Chemicals linked to failures, insufficiencies or delays at any level of the immune system response
• EU RoHS Directive • Bisphenols • PVC • Phthalates • California Proposition 65 chemicals • Flame retardants • PFCs	Reproductive toxins	Chemicals linked to damaged or inactivated ovaries or testes, damaged chromosomes, and/or adversely affected reproductive hormones

* As indicated by the U.S. Department of Human Health and Services, the U.S. Environmental Protection Agency, the National Cancer Institute, the U.S. Agency for Toxic Substances and Disease Registry, California Prop 65, the Oregon Toxic-Free Kids Act, the Green Science Policy Institute, and the International Agency for Research on Cancer.[1,3,4,5,20,21,22]

- **Present the need for and feasibility of data-driven monitoring of safer chemicals as an ongoing initiative.** In collaboration with the HCO's purchasing department, Vizient prepared a kickoff presentation for HCO key stakeholders. Real-time purchasing data for high-risk patient care areas was matched with a Vizient EP attribute database containing over 600,000 products. Vizient prepared an initial data snapshot in dashboard format, showing products with and without chemical attribute information by purchase order spend, product category, unique product count and potential negative health impacts. Emphasis was placed on the ongoing monitoring of unsafe chemicals in products for (at least) high-risk patient care areas, leveraging collaboration between suppliers and Vizient and using Vizient informatics to efficiently integrate purchasing and EP attribute information at the organization, facility, department, product category and individual product levels.
- **Establish key performance indicators (KPIs) to monitor success and thresholds of safety standards.** KPIs are critical indicators of progress toward an intended result. KPIs provide a focus for strategic and operational improvement, create an analytical basis for decision-making, and help focus attention on what matters most. Effective KPIs provide objective evidence of progress toward achieving a desired result, measure what is intended to be measured to help inform better decision-making and offer a comparison that gauges the degree of performance change over time. KPIs for this initiative were to maximize transparency into safer chemical attribute information at the product category and individual product levels and indicate positive or negative safer chemical impact and potential risk of health impact when considering product conversion opportunities at the product category and individual product levels. Waste reduction attributes were also monitored at the product category and individual product levels.
- **Visualize the initiative's process flow and how the information will support comprehensive value analysis decision-making.** Visualize the process flow of the initiative, clearly defining specific needs for all key stakeholders, including deadlines. This will help create a standardized, cyclical approach to evaluate product categories or individual products efficiently. The HCO initiative champion(s) should confirm with each stakeholder that they clearly understand what is needed from their specific role in the overall scope of the initiative, especially as it relates to efficiently integrating purchasing, EP attribute and product conversion information. Discuss how purchasing and EP attribute data will be collected, processed and prepared for 360-degree value analysis .

Table 2: Steps to consider when building a process flow

Step	Detail
Pull purchasing data	• Pull the most recent 12 months of purchasing data for high-risk patient care areas (note: if seasonal fluctuations in patient volume occur, pull three to six months of data and annualize accordingly). • Data can either be pulled directly from the HCO's materials management information system (MMIS) or from GPO informatics, if available.
Categorize the products	• Analyze spend in high-risk patient care areas by product category, using GPO categorization and/or UNSPSC codes. • Identify product categories as having direct or indirect contact with high-risk patients. • Prioritize transparency of safer chemical attributes for product categories having direct contact with high-risk patients.
Integrate EP attribute information	• Match EP attribute data — including safer chemical and waste reduction attribute information — with purchasing data for product categories and individual products having direct contact with high-risk patients. • Create a dashboard to benchmark and monitor sustainable procurement performance at the organization, facility, department, product category and individual product level(s).

Step	Detail
	• Dashboard KPIs should include (at a minimum): – Percentage and dollar amount of unique products with or without EP attributes at the organization, facility, department and product category levels – Percentage and dollar amount of total spend with or without EP attributes at the organization, facility, department and product category level(s) – Monthly, quarterly and annual performance at the organization, facility, department and product category level(s) – Chemical transparency ▪ Products matched to chemical attribute information ▪ Latex-free products ▪ Bisphenol-free products ▪ PVC-free products ▪ Phthalate-free products ▪ Antimicrobial-free products ▪ Flame retardant-free products ▪ Metal-free products ▪ PFC-free products – Health impact ▪ Allergen-free products ▪ Carcinogen-free products ▪ Developmental toxin-free products ▪ Endocrine disruptor-free products ▪ Genetic disruptor-free products ▪ Immunosuppressant-free products ▪ Reproductive toxin-free products – Waste reduction ▪ Nonhazardous waste products ▪ Products in recyclable packaging ▪ Recyclable products
Categorize clinical impact(s)	• Establish consensus on a methodology to categorize chemical attribute information into potential negative health impacts due to acute or chronic exposure to unsafe chemical(s).
Send supplier RFIs	• Identify product cross-references and missing EP attribute data needed from preferred suppliers. • Establish a standardized RFI data collection template to send to preferred suppliers. • Determine if the GPO can assist on EP attribute data collection for its contracted suppliers. • A single contact for the HCO, either purchasing or the HCO initiative champion(s), should send RFIs to non-GPO suppliers (also known as locally negotiated suppliers). • Establish and enforce equal deadlines (two to three weeks) for suppliers to complete the RFI.
Prepare results for 360-degree value analysis	• After RFI data collection, update product cross-reference templates and/or EP attribute information accordingly. • Use a multidisciplinary approach to work with HCO key stakeholders and end users to collect information needed to evaluate potential financial, clinical, operational and sustainability impact(s) (note: see the example 360-degree value analysis questions that follow).
Identify chemical and health impacts of conversions	• Indicate positive, negative or no impact change(s) for chemical classifications at the product category and individual product levels. • Indicate positive, negative or no impact change(s) for health impact categories at the product category and individual product levels.
Apply 5-leaf sustainability rating	• A 5-leaf sustainability rating was created for products using the following methodology: = Did the supplier submit responses for all relevant chemical attributes? = Does the product meet chemical safety standards? = Does the product reduce hazardous waste? = Is the product packaging recyclable? = Did the supplier disclose information on all EP attributes? **Example:** Infant diaper A: Infant diaper B:

Source: Vizient internal data

- **Create a 360-degree value analysis questionnaire template.** The 360-degree value analysis process is designed to improve multidisciplinary communication to comprehensively evaluate potential financial, clinical, operational and sustainability impacts of supply, capital equipment or purchased service changes. Responses to established questions should be based on data-driven, evidence-based decision-making, including key stakeholder and end user expertise.
- **Standardize a cross-reference template to evaluate product conversions at the product category and individual product levels.** Using a standardized template to evaluate conversion opportunities helps make supplier requests for product cross-references easier to complete, allowing key stakeholders and end users to quickly evaluate the potential financial impact of conversion opportunities at the individual product level. A template also provides all the information necessary to efficiently

Table 3: Key questions to consider in 360-degree value analysis

Financial impact	Clinical impact
• What is the annual impact on the cost of supplies or service? • What is the impact on enterprise net revenue? • **Coverage:** Is the new product or service considered part of the patient's insurance benefits? • **Coding:** Is the new product or service codable? • **Payment:** Will payers cover the new product or service? • Is the new product or service requested available on GPO contract? • Will other supplier contracts be negatively impacted? • Is a rebate or other value-added structure available with the supplier or vendor?	• Are the new products certified by the FDA or Centers for Disease Control and Prevention (NIOSH)? • How will the new product(s) or service affect current clinical outcomes? • Will the new product(s) or service reduce variation in delivery of care? • Will the new product(s) or service improve efficiency? • What is the highest level of research supporting the product(s) or service? • Does the new product(s) or service have any reported adverse events? • What potential clinical impacts or safety risks to the patient should be considered? • Is there shared responsibility of risk with the supplier on the new product(s) or service?
Operational impact	**Sustainability impact**
• What departments and end users will be impacted? • Will biomed, sterile processing or information technology (IT) be involved in any way? • What regulatory concerns will be addressed? • Will a trial of the new product(s) or service be needed? • Will staff education be needed? • Will the new product(s) involve on-site or off-site distribution? • Will the new product(s) help reduce inventory? • If a product conversion is involved, how much current remaining stock will need to be used? • Will changes be needed in other platforms, such as the enterprise resource planning (ERP)/MMIS or electronic health record (EHR)? • Will biomed, sterile processing or IT be involved in any way?	• What is the chemical transparency of the product(s) or service being considered? • Does the new product(s) or service reduce patient and staff exposure to unsafe chemicals? • Does the new product(s) or service contribute to waste reduction efforts? • Does the supplier or vendor have a record of environmental responsibility? • Does the supplier or vendor have a record of social responsibility? • Is the supplier or vendor a diverse business?

Source: Vizient internal data

update the MMIS. Key data fields to include (at a minimum) when cross-referencing current versus potential conversion products are:

- Distributor name and product number(s)
- Manufacturer name and product number(s)
- MMIS/ERP item master number(s)
- Long and short product description(s)
- Last price paid at the lowest unit of measure (UOM) level
- Projected price paid at each UOM level
- Current product usage at each level
- Current estimated annual purchases at the overall product category and individual product level(s)
- Estimated dollar savings amount at both a full product category standardization and individual product conversion level(s)

- **Agree to move forward and communicate information, kicking off the initiative.** A decision to move forward with the initiative must be formally recognized across the organization and supported at the executive level. An organizational pledge or charter indicating the importance and purpose of removing unsafe chemicals from the supply chain should be communicated to internal and external key stakeholders before the initiative is officially activated. When communicating with these stakeholders, it is essential to link the initiative's purpose to the organization's overall policies, mission and values.

  Note: After executive leadership becomes comfortable with the methodology, then patient and staff safety and supply chain policies should be updated to include supplier product transparency and data-driven monitoring of safer chemical attribute information at the organization, facility, department, product category and individual product levels.

Phase 2 — Activate the methodology

- **Prioritize supplier outreach for product cross-references and EP attribute data.** During the initial snapshot creation of product purchases and EP attribute data for the initiative kickoff, Vizient identified gaps in the data at the product level for product cross-references and/or EP attribute data. Products identified as actively being used in high-risk patient department areas were categorized as having either direct or indirect contact with patients. Outreach was prioritized for suppliers missing cross-reference and/or EP attribute data and having direct contact with patients.
- **Standardize supplier outreach and establish an RFI deadline.** Vizient and the HCO simultaneously sent to all prioritized suppliers a standardized email with an attached data collection template. The Vizient standard EP attribute data template was used to collect EP attribute information from both Vizient and non-GPO suppliers. Suppliers were provided an equal deadline of three weeks to complete their RFI for this case study.

  Recommendations:

  - When speaking with suppliers about this initiative, it is important for the HCO champion(s) to share how the information is used to evaluate products in 360-degree value analysis decision-making.
  - Communicate the concept of a quiet period to both internal and external key stakeholders from the date the RFI is sent to the supplier through initiative completion. Only the HCO initiative champion(s) or the purchasing department should serve as the organization's primary voice in any price discussions or negotiations. All other stakeholders should refrain from negotiating with suppliers during the quiet period.
- **Collect and validate product cross-references and EP attribute information.** All RFIs returned by suppliers were uploaded into Vizient informatics to integrate with active purchasing data for high-risk patient care areas. For those suppliers that chose not to respond to the RFI or missed the response deadline, missing EP attribute information was categorized as unknown. Validation of product cross-references submitted by suppliers should be identified as functional equivalents or alternatives to

current products before presenting to the value analysis committee(s). Validation of EP attribute information submitted by suppliers will vary depending on each HCO's preference. For Vizient-awarded suppliers, all EP attribute information submitted during the national contracting bid process and in collaboration with health care organization RFIs is considered a legally bound disclosure of accuracy to Vizient and its member HCOs.

- **Establish ongoing communication with key stakeholders to share initiative progress and data completeness.** Supplier responses were tracked on a weekly basis and follow-up was applied as needed due to lack of supplier responses. Local supplier sales representative(s) were leveraged to prompt responses from their corporation. Key internal stakeholders, such as supply chain and physician and clinician leadership, were also essential in motivating supplier responses. Email and brief updates during departmental meetings served as the primary forms of progress updates to minimize disruption of patient care.

Phase 3 — Prepare results for 360-degree value analysis

- **Financial impact:** Purchasing, supply chain, strategic planning, revenue cycle management and Vizient served as the preferred sources of financial impact information.
- **Clinical impact:** Physician and clinician end users, supply chain, the medical library, suppliers, and Vizient served as the preferred sources of clinical impact information.
- **Operational impact:** Supply chain, physician and/or clinician end users, suppliers and/or distributors, and Vizient served as the primary sources of operational impact information.
- **Sustainability impact:** Purchasing, supply chain, suppliers and Vizient served as the primary sources of truth for sustainability impact information.

  Recommendation: The HCO should include the sustainability director and/or social responsibility director early in the communication process regarding the sustainability impact quadrant of the 360-degree value analysis questionnaire, if such positions exist within the HCO.

360-degree value analysis results

Note: To protect proprietary information, responses to some questions on the following 360-degree value analysis template(s) cannot be disclosed. A general summary of the results in the sustainability impact evaluation of current products and conversion opportunities in product categories with direct patient contact is outlined below.

Infant diapers

At the time of this case study, the HCO used 14 unique diaper products from three suppliers. Two of these suppliers responded to the RFI and provided EP attribute information on their products. One supplier chose not to respond to the RFI and EP attribute information on their diaper product was categorized as "unknown." Vizient immediately matched 64% of all diaper products used by the HCO to EP attribute information, with an additional 36% of EP attribute information gained through the supplier RFI process.

Health impact

Summary: Identified **29%** of infant diaper products as allergen free and identified an opportunity to reduce allergens.

Table 4

KPI	Unique product count	Percentage of unique products (SKUs)	Percentage of total category spend
Allergen-free products	4 of 14	29%	2%
Carcinogen-free products	13 of 14	92%	98%
Developmental toxin-free products	13 of 14	92%	98%
Endocrine disruptor-free products	13 of 14	92%	98%
Genetic disruptor-free products	13 of 14	92%	98%
Immunosuppressant-free products	13 of 14	92%	98%
Reproductive toxin-free products	13 of 14	92%	98%

Source: Vizient internal data

Chemical Transparency

Summary: Chemical transparency scored high in this category, with a large majority of infant diaper products meeting chemical safety standards. An opportunity to reduce latex was identified.

Table 5

KPI	Unique product count	Percentage of unique products (SKUs)	Percentage of total category spend
Products matched to chemical attribute information	13 of 14	92%	98%
Latex-free products	5 of 14	36%	4%
Bisphenol-free products	13 of 14	92%	98%
PVC-free products	13 of 14	92%	98%
Phthalate-free products	13 of 14	92%	98%
Antimicrobial-free products	13 of 14	92%	98%
Flame retardant-free products	13 of 14	92%	98%
Metal-free products	13 of 14	92%	98%
PFC-free products	13 of 14	92%	98%

Source: Vizient internal data

Waste reduction

Summary: Identified **100%** of infant diaper products as contributing to waste reduction efforts.

Table 6

KPI	Unique product count	Percentage of unique products (SKUs)	Percentage of total category spend
Nonhazardous waste products	14 of 14	100%	100%
Products in recyclable packaging	14 of 14	100%	100%
Recyclable products	*Not applicable		

* Products are considered medical waste after use. Source: Vizient internal data

Opportunity

Table 7: Reduce allergens in infant diapers.

Summary
• Twenty-nine percent of infant diaper products being used were identified as allergen free. • An opportunity was identified to convert four diaper products to allergen-free equivalents at less than a $60 total annual cost increase to the HCO. • The HCO will need to work with suppliers to identify allergen-free equivalents or alternatives to six diaper products currently in use that have been identified as containing chemicals linked to allergens.

Financial impact	Clinical impact
• **What is the annual impact on the cost of supplies or service?** Less than a $60 annual cost increase • **What is the impact on enterprise net revenue?** (Proprietary) • **Coverage: Is the new product or service considered part of the patient's insurance benefits?** Yes • **Coding: Is the new product or service codable?** Yes • **Payment: Will payers cover the new product or service?** Yes • **Is the new product or service requested available on GPO contract?** Yes • **Will other supplier contracts be negatively impacted?** No • **Is a rebate or other value-added structure available with the supplier or vendor?** (Proprietary)	• **Are the new products certified by the FDA or CDC (NIOSH)?** Yes • **How will the new product(s) or service affect current clinical outcomes?** (Proprietary) • **Will the new product(s) or service reduce variation in delivery of care?** N/A • **Will the new product(s) or service improve efficiency?** N/A • **What is the highest level of research supporting the product(s) or service?** N/A • **Does the new product or service have any reported adverse events?** No • **What are potential clinical impacts or safety risks to the patient that should be considered?** Reduced exposure to chemicals linked to allergens • **Is there shared responsibility of risk with the supplier on the new product(s) or service?** (Proprietary)
Operational impact	**Sustainability impact**
• **What departments and end users will be impacted?** Neonatal intensive care unit (NICU), obstetrics/ maternity, pediatrics, surgical services • **Will biomed, sterile processing or IT be involved in any way?** No • **What regulatory concerns will be addressed?** N/A • **Will a trial on the new product(s) or service be needed?** No • **Will staff education be needed?** No • **Will the new product(s) involve on-site or off-site distribution?** Both • **Will the new product(s) help reduce inventory?** No • **If a product conversion is involved, how much current remaining stock will need to be used?** (Proprietary) • **Will changes be needed in other platforms, such as the ERP/MMIS or EHR?** MMIS only	• **What is the chemical transparency of the product(s) or service being considered?** 100% • **Does the new product(s) or service reduce patient and staff exposure to unsafe chemicals?** Yes • **Do the new product(s) or service contribute to waste reduction efforts?** Yes • **Does the supplier or vendor have a record of environmental responsibility?** (Proprietary) • **Does the supplier or vendor have a record of social responsibility?** (Proprietary) • **Is the supplier or vendor a diverse business?** No

Source: Vizient internal data

Table 8: 5-leaf sustainability ratings

Supplier A	
Micro-preemie diaper	5 leaves
Preemie diaper	5 leaves
Newborn diaper	5 leaves
Size 1 diaper	5 leaves
Size 3 diaper	5 leaves
Size 4 diaper	5 leaves
Size 6 diaper	5 leaves
Baby wipe	5 leaves
Supplier B	
Size 1 diaper	4.5 leaves
Supplier C	
Size 2 diaper	4.5 leaves
Size 5 diaper	5 leaves

= 5-leaf sustainability rating. Source: Vizient internal data

Nasogastric feeding tubes

At the time of this case study, the HCO used eight nasogastric feeding tube products from four suppliers. Vizient immediately matched 25% of these products to EP attribute information. No additional EP attribute information was gained through the supplier RFI process. EP attributes for 75% of nasogastric feeding tube products were categorized as unknown due to lack of supplier response in the RFI process.

Health impact

Summary: Of the two nasogastric feeding tube products matched to safer chemical attribute information, one contained chemicals linked to allergens. The potential negative health impact of **75%** of nasogastric feeding tube products was categorized as unknown due to lack of supplier response in the RFI process.

Table 9

KPI	Unique product count	Percentage of unique products (SKUs)	Percentage of total category spend
Allergen-free products	1 of 8	13%	3%
Carcinogen-free products	0 of 8	0%	0%
Developmental toxin-free products	0 of 8	0%	0%
Endocrine disruptor-free products	0 of 8	0%	0%
Genetic disruptor-free products	0 of 8	0%	0%
Immunosuppressant-free products	0 of 8	0%	0%
Reproductive toxin-free products	0 of 8	0%	0%

Source: Vizient internal data

Chemical transparency

Summary: Chemical transparency scored low in this category, with the chemical composition of **75%** of nasogastric feeding tube products categorized as unknown due to lack of supplier response during the RFI process.

Table 10

KPI	Unique product count	Percentage of unique products (SKUs)	Percentage of total category spend
Products matched to chemical attribute information	2 of 8	25%	3%
Latex-free products	3 of 8	38%	4%
Bisphenol-free products	1 of 8	13%	<1%
PVC-free products	2 of 8	25%	3%
Phthalate-free products	2 of 8	25%	3%
Antimicrobial-free products	0 of 8	0%	0%
Flame retardant-free products	1 of 8	13%	<1%
Metal-free products	1 of 8	13%	<1%
PFC-free products	1 of 8	13%	<1%

Source: Vizient internal data

Waste reduction

Summary: Identified **13%** of nasogastric feeding tube products as contributing to nonhazardous waste reduction efforts, while **25%** of these products come in recycled packaging. Waste reduction impacts for **75%** of nasogastric feeding tube products were categorized as unknown due to lack of supplier response in the RFI process.

Table 11

KPI	Unique product count	Percentage of unique products (SKUs)	Percentage of total category spend
Nonhazardous waste products	1 of 8	13%	<1%
Products in recyclable packaging	2 of 8	25%	3%
Recyclable products	*Not applicable		

*Products are considered medical waste after use. Source: Vizient internal data

Opportunity

Table 12: Improve safer chemical transparency of nasogastric feeding tubes.

Summary
The HCO needs to work with suppliers to: • Increase chemical transparency of current nasogastric feeding tube products. • Identify safer chemical equivalents or alternatives to any products containing chemicals linked to allergens, carcinogens, developmental toxins, endocrine disruptors, genetic disruptors, immune system disruptors and/or reproductive toxins.

Table 13: 5-leaf sustainability ratings

Supplier A	
Enteral Y extension set	🍃🍃🍃🍃🍃
Supplier B	
Bifurcated extension set 60in	🍃🍃🍃🍃🍃
Nasogastric feeding tube 5 fr 36in	🍃🍃🍃🍃🍃
Supplier C	
Y extension set 30in	🍃🍃🍃🍃🍃
Y extension set 60in	🍃🍃🍃🍃🍃
Nasogastric feeding tube 6.5fr 40cm	🍃🍃🍃🍃🍃
Nasogastric feeding tube 8.0fr 40cm	🍃🍃🍃🍃🍃
Supplier D	
Pediatric nasogastric feeding tube 8fr 50cm	🍃🍃🍃🍃🍃

🍃 = 5-leaf sustainability rating. Source: Vizient internal data

Obstetrics specialty products: umbilical catheters

At the time of this case study, the HCO used two unique umbilical catheters from one supplier. Vizient immediately matched 100% of umbilical catheters to EP attribute information.

Health impact

Summary: Identified **100%** of umbilical catheters as containing chemicals linked to allergens, carcinogens, developmental toxins, endocrine disruptors, genetic disruptors, immune system disruptors and reproductive toxins.

Table 14

KPI	Unique product count	Percentage of unique products (SKUs)	Percentage of total category spend
Allergen-free products	0 of 2	0%	0%
Carcinogen-free products	0 of 2	0%	0%
Developmental toxin-free products	0 of 2	0%	0%
Endocrine disruptor-free products	0 of 2	0%	0%
Genetic disruptor-free products	0 of 2	0%	0%
Immunosuppressant-free products	0 of 2	0%	0%
Reproductive toxin-free products	0 of 2	0%	0%

Source: Vizient internal data

Chemical transparency

Summary: Chemical transparency scored high in this category. Both umbilical catheters meet chemical safety standards for bisphenols, PVC and phthalates. However, neither umbilical catheter meets chemical safety standards for latex, antimicrobials, flame retardants, certain metals and PFCs.

Table 15

KPI	Unique product count	Percentage of unique products (SKUs)	Percentage of total category spend
Products matched to chemical attribute information	2 of 2	100%	100%
Latex-free products	0 of 2	0%	0%
Bisphenol-free products	2 of 2	100%	100%
PVC-free products	2 of 2	100%	100%
Phthalate-free products	2 of 2	100%	100%
Antimicrobial-free products	0 of 2	0%	0%
Flame retardant-free products	0 of 2	0%	0%
Metal-free products	0 of 2	0%	0%
PFC-free products	0 of 2	0%	0%

Source: Vizient internal data

Waste reduction

Summary: No umbilical catheters contribute to waste reduction efforts.

Table 16

KPI	Unique product count	Percentage of unique products (SKUs)	Percentage of total category spend
Nonhazardous waste products	0 of 2	0%	0%
Products in recyclable packaging	0 of 2	0%	0%
Recyclable products	*Not applicable		

*Products are considered medical waste after use. Source: Vizient internal data

Opportunity

Table 17: Remove allergens, carcinogens, developmental toxins, endocrine disruptors, genetic disruptors, immune system disruptors and reproductive toxins from all umbilical catheters.

Summary
The HCO needs to work with suppliers to identify safer chemical equivalents or alternatives to any products containing chemicals linked to allergens, carcinogens, developmental toxins, endocrine disruptors, genetic disruptors, immune system disruptors and reproductive toxins.

Table 18: 5-leaf sustainability ratings

Supplier A	
Catheter umbilical 3.5 fr 15in	
Catheter umbilical 5.0 fr 15in	

= 5-leaf sustainability rating. Source: Vizient internal data

Intravenous (IV) catheters

At the time of this case study, the HCO used 13 IV catheters from two suppliers. Vizient immediately matched 100% of IV catheters to EP attribute information.

Health impact

Summary: Identified that **23%** of IV catheters contained chemicals linked to allergens, carcinogens, developmental toxins, endocrine disruption, genetic disruption, immune system disruption and reproductive toxins. Opportunities were identified to standardize all IV catheters to products that meet all chemical safety standards.

Table 19

KPI	Unique product count	Percentage of unique products (SKUs)	Percentage of total category spend
Allergen-free products	0 of 2	0%	0%
Carcinogen-free products	0 of 2	0%	0%
Developmental toxin-free products	0 of 2	0%	0%
Endocrine disruptor-free products	0 of 2	0%	0%
Genetic disruptor-free products	0 of 2	0%	0%
Immunosuppressant-free products	0 of 2	0%	0%
Reproductive toxin-free products	0 of 2	0%	0%

Source: Vizient internal data

Chemical transparency

Summary: Chemical transparency scored high in this category, with a large majority of IV catheters meeting chemical safety standards. The group identified that **23%** of IV catheters contained PFCs. Conversion opportunities were identified to remove PFCs from all IV catheters.

Table 20

KPI	Unique product count	Percentage of unique products (SKUs)	Percentage of total category spend
Products matched to chemical attribute information	13 of 13	100%	100%
Latex-free products	13 of 13	100%	100%
Bisphenol-free products	13 of 13	100%	100%
PVC-free products	13 of 13	100%	100%
Phthalate-free products	13 of 13	100%	100%
Antimicrobial-free products	13 of 13	100%	100%
Flame retardant-free products	13 of 13	100%	100%
Metal-free products	13 of 13	100%	100%
PFC-free products	10 of 13	77%	75%

Source: Vizient internal data

Waste reduction

Summary: Identified **100%** of IV catheters as contributing to waste reduction efforts.

Table 21

KPI	Unique product count	Percentage of unique products (SKUs)	Percentage of total category spend
Nonhazardous waste products	0 of 2	0%	0%
Products in recyclable packaging	0 of 2	0%	0%
Recyclable products	*Not applicable		

*Products are considered medical waste after use. Source: Vizient internal data

Opportunity

Table 22: Standardize to safer chemicals in all IV catheters.

Summary
• Seventy-seven percent of IV catheters in use were free of allergens, carcinogens, developmental toxins, endocrine disruptors, genetic disruptors, immune system disruptors and reproductive toxins. • An opportunity was identified to remove unsafe chemicals from all IV catheters for less than a $70 total annual cost increase to the HCO. • An inventory reduction opportunity was identified, allowing the HCO to carry two IV catheters instead of three.

Financial impact	Clinical impact
• **What is the annual impact on cost of supplies or service?** Less than a $70 annual cost increase • **What is the impact on enterprise net revenue?** (Proprietary) • **Coverage: Is the new product or service considered part of the patient's insurance benefits?** Yes • **Coding: Is the new product or service codable?** Yes • **Payment: Will payers cover the new product or service?** Yes • **Is the new product or service requested available on GPO contract?** Yes • **Will other supplier contracts be negatively impacted?** No • **Is a rebate or other value-added structure available with the supplier or vendor?** (Proprietary)	• **Are the new products certified by the FDA or CDC (NIOSH)?** Yes • **How will the new product(s) or service affect current clinical outcomes?** (Proprietary) • **Will the new product(s) or service reduce variation in delivery of care?** No • **Will the new product(s) or service improve efficiency?** (Proprietary) • **What is the highest level of research supporting the product(s) or service?** (Proprietary) • **Does the new product or service have any reported adverse events?** (Proprietary) • **What are potential clinical impacts or safety risks to the patient that should be considered?** Reduced exposure to chemicals linked to allergens, carcinogens, developmental toxins, endocrine disruptors, genetic disruptors, immune system disruptors and reproductive toxins • **Is there shared responsibility of risk with the supplier on the new product(s) or service?** (Proprietary)
Operational impact	**Sustainability impact**
• **What departments and end users will be impacted?** NICU, pediatric intensive care unit (PICU), pediatrics • **Will biomed, sterile processing or IT be involved in any way?** No • **What regulatory concerns will be addressed?** (Proprietary) • **Will a trial on the new product(s) or service be needed?** Yes • **Will staff education be needed?** Yes • **Will the new product(s) involve on-site or off-site distribution?** Both • **Will the new product(s) help reduce inventory?** Yes • **If a product conversion is involved, how much current remaining stock will need to be used?** (Proprietary) • **Will changes be needed in other platforms, such as the ERP/MMIS or EHR?** MMIS, EHR	• **What is the chemical transparency of the product(s) or service being considered?** 100% • **Do the new product(s) or service reduce patient and staff exposure to unsafe chemicals?** Yes • **Does the new product(s) or service contribute to waste reduction efforts?** Yes • **Does the supplier or vendor have a record of environmental responsibility?** (Proprietary) • **Does the supplier or vendor have a record of social responsibility?** (Proprietary) • **Is the supplier or vendor a diverse business?** No

Source: Vizient internal data

Table 23: 5-leaf sustainability ratings

Supplier A	
Winged IV catheter 24ga L0.55in	🍃🍃🍃🍃🍃
Winged IV catheter 24ga L0.75in	🍃🍃🍃🍃🍃
Straight IV catheter 24ga L0.75in	🍃🍃🍃🍃🍃
Supplier B	
Winged IV catheter 18ga L1.13in	🍃🍃🍃🍃🍃
Winged IV catheter 20ga L0.75in	🍃🍃🍃🍃🍃
Winged IV catheter 20ga L1.00in	🍃🍃🍃🍃🍃
Winged IV catheter 20ga L1.13in	🍃🍃🍃🍃🍃
Winged IV catheter 22ga L0.75in	🍃🍃🍃🍃🍃
Winged IV catheter 24ga L0.56in	🍃🍃🍃🍃🍃
Straight IV catheter 18ga L1.13in	🍃🍃🍃🍃🍃
Straight IV catheter 20ga L1.13in	🍃🍃🍃🍃🍃
Straight IV catheter 22ga L1.00in	🍃🍃🍃🍃🍃
Straight IV catheter 24ga L0.75in	🍃🍃🍃🍃🍃

🍃 = 5-leaf sustainability rating. Source: Vizient internal data

Neonatal specialty products

At the time of this case study, the HCO used 16 unique neonatal safety products from four suppliers. Vizient immediately matched 53% of neonatal specialty products to EP attribute information. No additional EP attribute information was gained through the supplier RFI process. EP attributes for 50% of neonatal safety products were categorized as unknown due to lack of supplier response in the RFI process.

Health impact

Summary: Identified **56%** of neonatal specialty products as containing chemicals linked to allergens, carcinogens, developmental toxins, endocrine disruption, genetic disruption, immune system disruption and reproductive toxins.

Table 24

KPI	Unique product count	Percentage of unique products (SKUs)	Percentage of total category spend
Allergen-free products	9 of 16	56%	79%
Carcinogen-free products	9 of 16	56%	79%
Developmental toxin-free products	9 of 16	56%	79%

Table 24 (continued)

KPI	Unique product count	Percentage of unique products (SKUs)	Percentage of total category spend
Endocrine disruptor-free products	9 of 16	56%	79%
Genetic disruptor-free products	9 of 16	56%	79%
Immunosuppressant-free products	9 of 16	56%	79%
Reproductive toxin-free products	9 of 16	56%	79%

Source: Vizient internal data

Chemical transparency

Summary: Chemical transparency scored high in this category; **75%** of neonatal specialty products currently meet chemical safety standards for latex; **56%** of neonatal specialty products meet chemical safety standards for bisphenols, phthalates, antimicrobials, flame retardants, metals and PFCs; and **63%** of neonatal specialty products meet chemical safety standards for PVC.

Table 25

KPI	Unique product count	Percentage of unique products (SKUs)	Percentage of total category spend
Products matched to chemical attribute information	11 of 16	69%	89%
Latex-free products	12 of 16	75%	80%
Bisphenol-free products	9 of 16	56%	79%
PVC-free products	10 of 16	63%	80%
Phthalate-free products	9 of 16	56%	79%
Antimicrobial-free products	9 of 16	56%	79%
Flame retardant-free products	9 of 16	56%	79%
Metal-free products	9 of 16	56%	79%
PFC-free products	9 of 16	56%	79%

Source: Vizient internal data

Waste reduction

Summary: Identified that **56%** of neonatal specialty products contribute to nonhazardous waste reduction efforts and **63%** of neonatal specialty products come in recycled packaging.

Table 24

KPI	Unique product count	Percentage of unique products (SKUs)	Percentage of total category spend
Nonhazardous waste products	9 of 16	56%	79%
Products in recyclable packaging	10 of 16	63%	79%
Recyclable products	*Not applicable		

*Products are either multi-use or considered medical waste after use.
Source: Vizient internal data

Opportunity

Table 25: Identify safer chemical neonatal specialty product alternatives.

Summary
The HCO needs to work with suppliers to identify safer chemical equivalents or alternatives to any products containing chemicals linked to allergens, carcinogens, developmental toxins, endocrine disruptors, genetic disruptors, immune system disruptors and reproductive toxins.

Table 26: 5-leaf sustainability ratings

Supplier A	
Beanbag patient positioner	5
Heel warmer	5
Preemie pacifier	0
Infant pacifier	5
Preemie positioning nest small	5
Infant positioning nest small	5
Infant positioning nest medium	5
Infant positioning nest large	5
Infant transport mattress	5
Natural soothing solution	5
Supplier B	
Clear suction aspirator	0
Preemie suction device	0
Infant suction device	0

Table 26: 5-leaf sustainability ratings (continued)

Supplier C	
Suction tip 3.25in	0
Supplier D	
Nasal aspirator 3.25in	3
Infant rocker cover	4

= 5-leaf sustainability rating. Source: Vizient internal data

Urinary catheters

At the time of this case study, the HCO used 21 urinary catheters from four suppliers. Vizient immediately matched 43% of urinary catheters to EP attribute information. No additional EP attribute information was gained through the supplier RFI process. EP attributes for 57% of urinary catheters were categorized as unknown due to lack of supplier response in the RFI process.

Health impact

Summary: Identified that **43%** of urinary catheters were allergen free, while all urinary catheters contained chemicals linked to carcinogens, developmental toxins, endocrine disruptors, genetic disruptors, immune system disruptors and reproductive toxins.

Table 27

KPI	Unique product count	Percentage of unique products (SKUs)	Percentage of total category spend
Allergen-free products	9 of 21	43%	<1%
Carcinogen-free products	0 of 21	0%	0%
Developmental toxin-free products	0 of 21	0%	0%
Endocrine disruptor-free products	0 of 21	0%	0%
Genetic disruptor-free products	0 of 21	0%	0%
Immunosuppressant-free products	0 of 21	0%	0%
Reproductive toxin-free products	0 of 21	0%	0%

Source: Vizient internal data

Chemical transparency

Summary: Chemical transparency scored low in this category; **81%** of urinary catheters currently meet chemical safety standards for latex, **33%** meet chemical safety standards for PVC and **29%** meet chemical safety standards for phthalates. None of the urinary catheters currently meet chemical safety standards for bisphenols, antimicrobials, flame retardants, metals and PFCs.

Table 28

KPI	Unique product count	Percentage of unique products (SKUs)	Percentage of total category spend
Products matched to chemical attribute information	9 of 21	43%	93%
Latex-free products	17 of 21	81%	99%
Bisphenol-free products	0 of 21	0%	0%
PVC-free products	7 of 21	33%	3%
Phthalate-free products	6 of 21	29%	3%
Antimicrobial-free products	0 of 21	0%	0%
Flame retardant-free products	0 of 21	0%	0%
Metal-free products	0 of 21	0%	0%
PFC-free products	0 of 21	0%	0%

Source: Vizient internal data

Waste reduction

Summary: None of the urinary catheters contribute to waste reduction efforts.

Table 29

KPI	Unique product count	Percentage of unique products (SKUs)	Percentage of total category spend
Nonhazardous waste products	0 of 21	0%	0%
Products in recyclable packaging	0 of 21	0%	0%
Recyclable products	*Not applicable		

*Products are considered medical waste after use. Source: Vizient internal data

Opportunity

Table 30: A 40% cost reduction on indwelling catheter kits.

Summary
• A 40% cost reduction opportunity was identified by converting indwelling catheter kits from Supplier C to Supplier A. • The HCO needs to work with suppliers to increase the chemical transparency of current urinary catheters. • The HCO needs to work with suppliers to identify safer chemical equivalents or alternatives to any products containing chemicals linked to allergens, carcinogens, developmental toxins, endocrine disruptors, genetic disruptors, immune system disruptors and reproductive toxins.

Financial impact	Clinical impact
• **What is the annual impact on cost of supplies or service?** A 40% cost reduction on indwelling catheter kits. • **What is the impact on enterprise net revenue?** (Proprietary) • **Coverage: Is the new product or service considered part of the patient's insurance benefits?** Yes • **Coding: Is the new product or service codable?** Yes • **Payment: Will payers cover the new product or service?** Yes • **Is the new product or service requested available on GPO contract?** Yes • **Will other supplier contracts be negatively impacted?** No • **Is a rebate or other value-added structure available with the supplier or vendor?** (Proprietary)	• **Are the new products certified by the FDA or CDC (NIOSH)?** Yes • **How will the new product(s) or service affect current clinical outcomes?** (Proprietary) • **Will the new product(s) or service reduce variation in delivery of care?** Yes • **Will the new product(s) or service improve efficiency?** Yes • **What is the highest level of research supporting the product(s) or service?** (Proprietary) • **Does the new product or service have any reported adverse events?** (Proprietary) • **What are potential clinical impacts or safety risks to the patient that should be considered?** (Proprietary) • **Is there shared responsibility of risk with the supplier on the new product(s) or service?** (Proprietary)
Operational impact	**Sustainability impact**
• **What departments and end users will be impacted?** NICU and PICU • **Will biomed, sterile processing or IT be involved in any way?** No • **What regulatory concerns will be addressed?** (Proprietary) • **Will a trial on the new product(s) or service be needed?** Yes • **Will staff education be needed?** Yes • **Will the new product(s) involve on-site or off-site distribution?** Both • **If a product conversion is involved, how much current remaining stock will need to be used?** (Proprietary) • **Will changes be needed in other platforms, such as the ERP/MMIS or EHR?** MMIS, EHR	• **What is the chemical transparency of the product(s) or service being considered?** 5% • **Does the new product(s) or service reduce patient and staff exposure to unsafe chemicals?** No impact • **Do the new product(s) or service contribute to waste reduction efforts?** No • **Does the supplier or vendor have a record of environmental responsibility?** (Proprietary) • **Does the supplier or vendor have a record of social responsibility?** (Proprietary) • **Is the supplier or vendor a diverse business?** No

Source: Vizient internal data

Table 31: 5-leaf sustainability ratings

Supplier A	
Urine specimen collection kit 15mL	
Pediatric intermittent catheter kit 8fr	
Pediatric intermittent catheter kit 12fr	
Urethral catheter 16fr 16in	
Urinary meter bag 350mL	
Foley catheter 5cc balloon 16fr	
Intermittent urethral catheter tray 15fr	
Foley catheter 3cc balloon 8fr	
Foley catheter 3cc balloon 10fr	
Foley catheter 3cc balloon 12fr	
Foley catheter 3cc balloon 16fr	
Foley catheter 5cc balloon 12fr	
Foley catheter 5cc balloon 14fr	
Foley catheter 5cc balloon 18fr	
Indwelling catheter tray 16fr	
Indwelling catheter tray 5cc balloon 16fr	
Supplier B	
Urethral catheter 12fr 14in	
Supplier C	
Pediatric intermittent catheter kit 5fr	
Indwelling catheter kit 5fr	
Indwelling catheter kit 8fr	
Supplier D	
Foley stabilization device	

= 5-leaf sustainability rating. Source: Vizient internal data

Safer chemical information should strongly be considered in product selection moving forward.

"Chemicals in a child's surroundings are part of the environment that shapes the expression of genes and the trajectory of the child's life. Toxins that children come in contact with can have long-term consequences on their well-being..."[23]

Widespread contamination of unsafe chemicals in infants, children and adults is a silent epidemic today. Our constant inhalation, ingestion and absorption of unsafe chemicals polluting our surroundings is having a profoundly negative effect on our health personally, and public health generationally, starting before birth. As stated previously, babies born in the U.S. today have, on average, over 280 industrial chemicals in their bloodstreams the day they are born.[1] Microplastics have been found in the placentas of unborn babies containing chemicals linked to brain, heart, lung, kidney and liver damage in fetuses.[24,25] Obesity rates are skyrocketing worldwide, unexplained by evolving diets and lifestyles alone, with cases rising sharply in infants and children. Research has shown a correlation between exposure to endocrine-disrupting chemicals and obesity rates among infants, children and adults.[26] Endocrine-disrupting chemicals have been linked to autism, attention deficit hyperactivity disorder (ADHD) and learning disabilities.[27,28]

Bioaccumulation of unsafe chemicals in the body is increasingly linked to the development of neurodegenerative illness, such as dementia. Chemicals such as PFAS, linked to immune system suppression and severe COVID-19 outcomes, have been found in the drinking water of over 200 million Americans.[30,31] On the front lines taking care of these health problems are HCOs and their staffs. HCOs purchasing and using products that contain unsafe chemicals on patients, especially high-risk patients, is both counterintuitive and counterproductive to the "do no harm" bioethical principle of medicine. Therefore, it is a bioethical imperative for HCOs to prioritize the removal of unsafe chemicals from patient care settings for both patient and staff safety.

Legislation and polices alone are not enough to prevent unsafe chemicals from contaminating our home and work environments. Today, at least 140 chemicals linked to negative health impacts are found in common packaging materials, construction, flooring, food production, cookware, children's toys, sporting goods, furniture, electronics, textiles, automobiles, cosmetics, medical supplies and health care equipment.[32] Part of the challenge in regulating chemicals is a significant difference in laws worldwide that govern toxic chemical regulation. The European Union implemented a *proactive* approach to protecting the public from unsafe chemical exposure by emphasizing that when there is substantial, credible evidence of danger to human health, protective measures should be taken despite scientific uncertainty. In contrast, the U.S. approach to regulating chemicals is more *reactive*, requiring extremely high thresholds of demonstrated harm to human health before any regulatory action is taken. Contrary to common belief, there is no U.S. federal agency responsible for testing and monitoring hundreds of thousands of new chemicals released each year for negative effects on human health. Thankfully, more empirical studies and research are being published correlating the impact of industrial chemicals on human health, as well as increased global awareness, collaboration and innovation of safer chemical product alternatives.

One significant improvement in monitoring unsafe chemicals is the adoption of monitoring classes of chemicals with similar characteristics instead of hundreds of thousands of chemicals individually. The rationale behind this evolution in thinking is that science is showing that chemicals with similar characteristics also share the same negative impacts on human health. In addition, many U.S. states are taking the lead on drafting policies and legislation aimed at protecting the public from unsafe chemicals.[15] Major corporations such as Amazon, Walmart, Target, Walgreens and CVS have also established timelines and policies to remove unsafe chemicals from their stores.[33,34,35,36,37] The health care sector must do the same.

The primary challenge of monitoring unsafe chemicals in products across all business sectors, including health care, is a lack of digitization to effectively screen hundreds of thousands of chemicals in millions of products efficiently and at the product level. As many business sectors adopt data-driven, control tower approaches to monitoring enterprise performance, it is essential that data-driven tools are created to assist with chemical safety, including environmental and social responsibility performance as well.

As the adoption of digitization across all major business sectors grows, we hope this case study provides a sustainable, scalable, data-driven approach for HCOs to monitor unsafe chemicals in their supply chain, while also evaluating the chemical transparency of products and potential health risks, as well as waste reduction attributes of products used in patient care settings. Using the methodology outlined in this study, HCOs can begin upgrading their methodology from a predominately inefficient, manual and error-prone approach by leveraging technology to efficiently collect and match environmentally preferable attribute information to product purchases. By focusing specifically on products actively being purchased by high-risk patient care areas, HCOs can prioritize cleansing their supply chain of unsafe chemicals to prevent unnecessary chemical exposure for pregnant women, unborn fetuses, infants and children.

In addition, this case study has shown how environmentally preferable attribute information can be efficiently collected, analyzed and prepared for 360-degree value analysis decision-making within HCOs. Most often, financial, clinical and operational impacts are discussed without consideration of the environmental and social impacts of purchasing decisions. By efficiently providing environmental and social impact information to value analysis key stakeholders, HCOs can evaluate overall product quality more comprehensively. Similar to the influence of a five-star rating one sees when evaluating online products or services, the inclusion of sustainability impact information adds an additional layer of quality to products being evaluated.

Unfortunately, the negative impacts of industrial chemicals on human health will continue to be discovered, studied and publicized. As data-driven methods are innovated and adopted, the screening and removal of unsafe chemicals from health care settings worldwide will evolve from aspiration to expectation. As a contribution toward upgrading today's highly manual approach to monitoring unsafe chemicals in the health care supply chain, the methodology outlined in this case study provides at least one standardized, scalable, data-driven approach to screen for unsafe chemicals at the organization, facility, department, product category and individual product levels. Health care facilities worldwide — often considered to be the safest places on Earth — must take the lead on improving measures to protect patients and staff from unsafe chemical exposure, prioritizing high-risk patients.

References

1 Information about chemical hazards in child care settings for parents. U.S. Environmental Protection Agency. Updated October 11, 2018. Accessed March 11, 2021. https://www.epa.gov/childcare/information-about-chemical-hazards-child-care-settings-parents

2 84,000 chemicals on the market, only 1% have been tested for safety. EcoWatch. July 6, 2015. Accessed March 11, 2021. https://www.ecowatch.com/84-000-chemicals-on-the-market-only-1-have-been-tested-for-safety-1882062458.html

3 The proposition 65 list. California Office of Environmental Health Hazard Assessment. December 18, 2020. Accessed March 11, 2021. https://oehha.ca.gov/proposition-65/proposition-65-list

4 High priority chemicals of concern for Children's Health. Oregon Health Authority. Accessed March 11, 2021. https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/HEALTHYNEIGHBORHOODS/TOXICSUBSTANCES/Pages/childrens-chemicals-of-concern.aspx

5 The six classes approach to reducing chemical harm: healthier products, healthier people. Green Science Policy Institute. June 2017. Accessed March 11, 2021. https://www.sixclasses.org/

6 Bever CS, Rand AA, Nording M, Taft, et al. Effects of triclosan in breast milk on the infant fecal microbiome. *Chemosphere*. 2018;203(July):467-473. doi: 10.1016/j.chemosphere.2018.03.186

7 Why are trace chemicals showing up in umbilical cord blood? *Scientific American*. September 1, 2012. Accessed March 11, 2021. https://www.scientificamerican.com/article/chemicals-umbilical-cord-blood/

8 Crawford K. How chemicals like PFAs can increase your risk of severe COVID-19. *The Conversation*. August 31, 2020. Accessed March 11, 2021. https://theconversation.com/how-chemicals-like-pfas-can-increase-your-risk-of-severe-covid-19-143167

9 Milman O. Covid: chemicals found in everyday products could hinder vaccine. The Guardian. November 17, 2020. Accessed March 11, 2021. https://www.theguardian.com/world/2020/nov/17/chemicals-found-in-everyday-products-could-hinder-covid-19-vaccine

10 Chemical exposures on the job may be linked to diseases in nurses. News release. Environmental Working Group; December 11, 2007. Accessed March 11, 2021. https://www.ewg.org/news/news-releases/2007/12/11/chemical-exposures-job-may-be-linked-diseases-nurses

11 Wilding BC, Curtis K, Welker-Hood K. Hazardous chemicals in health care: a snapshot of chemicals in doctors and nurses. Physicians for Social Responsibility. Updated 2020. Accessed March 11, 2021. https://www.psr.org/wp-content/uploads/2018/05/hazardous-chemicals-in-health-care.pdf

12 Lewis J. Lead poisoning: a historical perspective. U.S. Environmental Protection Agency. May 1985. Accessed March 11, 2021. https://archive.epa.gov/epa/aboutepa/lead-poisoning-historical-perspective.html

13 States are leading the way to safer chemicals. Safer States. Accessed March 11, 2021. https://www.saferstates.org/

14 Rossi MS, Ratliff W. Chemical footprint of products commonly used in pediatrics departments. Clean Production Action. December 5, 2017. Accessed March 11, 2021. https://www.cleanproduction.org/resources/entry/report-chemical-footprint-products-in-pediatrics

15 Richter F. The industries most affected by counterfeit products. Statista. March 19, 2019. Accessed March 11, 2021. https://www.statista.com/chart/17410/counterfeit-and-pirated-products-by-category/

16 What is a GPO? Healthcare Supply Chain Association. Accessed March 11, 2021. https://www.supplychainassociation.org/about-us/what-is-gpo/

17 Vizient Environmentally Preferred Sourcing Program. Vizient. February 2020. Accessed March 11, 2021. https://www.vizientinc.com/-/media/documents/sitecorepublishingdocuments/secured/suppliers/eps_fact_sheet_supplier.pdf

18 Zaske S. Study finds BPA levels in humans dramatically underestimated. Washington State University. December 5, 2019. Accessed March 11, 2021. https://news.wsu.edu/2019/12/05/study-finds-bpa-levels-humans-dramatically-underestimated/

19 Vinyl chloride: what is vinyl chloride? National Cancer Institute. Reviewed December 28, 2018. Accessed March 11, 2021. https://www.cancer.gov/about-cancer/causes-prevention/risk/substances/vinyl-chloride

20 Polyvinyl chloride and copolymers production: national emission standards for hazardous air pollutants (NESHAP) – 40 CFR 63 subparts J & HHHHHHH. U.S. Environmental Protection Agency. Updated February 23, 2021. Accessed March 11, 2021. https://www.epa.gov/stationary-sources-air-pollution/polyvinyl-chloride-and-copolymers-production-national-emission-0

21 Public health statement: vinyl chloride. Agency for Toxic Substances and Disease Registry. July 2006. Accessed March 22, 2021. https://www.atsdr.cdc.gov/toxprofiles/tp20-c1-b.pdf

22 Wineland RJ, Bloom MS, Cruze L, et al. In utero effects of maternal phthalate exposure on male genital development. *Obstetrics and Gynaecology*. November 26, 2018. Accessed March 11, 2021. doi: 10.1002/pd.5398

23 Narvaez DF. Plastics and the health of children and mothers. *Psychology Today*. February 11, 2019. Accessed March 11, 2021. https://www.psychologytoday.com/us/blog/moral-landscapes/201902/plastics-and-the-health-children-and-mothers

24 Ragusa A, Svelato A, Santacroce C, et al. Plasticenta: first evidence of microplastics in human placenta. *Environ Int*. 2021;146(January):1-8. doi: 10.1016/j.envint.2020.106274

25 Fournier SB, D'Errico JN, Adler DS, et al. Nanopolystyrene translocation and fetal deposition after acute lung exposure during late-stage pregnancy. *Part Fibre Toxicol*. 2020;17(55):1-11. doi: 10.1186/s12989-020-00385-9

26 European Society of Endocrinology. Minimizing exposure to common hormone-disrupting chemicals may reduce obesity rates. ScienceDaily. May 20, 2018. Accessed March 11, 2021. https://www.sciencedaily.com/releases/2018/05/180520090900.htm

27 Landrigan PJ, Lambertini L, Birnbaum LS. A research strategy to discover the environmental causes of autism and neurodevelopmental disabilities. *Environ Health Perspect*. 2012;120(7):1-3. doi: 10.1289/ehp.1104285

28 Shoaff JR, Coull B, Weuve J. Association of exposure to endocrine-disrupting chemicals during adolescence with attention-deficit/hyperactivity disorder-related behaviors. *JAMA Netw Open*. 2020;3(8):e2015041:1-14. doi:10.1001/jamanetworkopen.2020.15041

29 Genuis SJ, Kelln KL. Toxicant exposure and bioaccumulation: a common and potentially reversible cause of cognitive dysfunction and dementia. *Behav Neurol*. 2015;620143. doi:10.1155/2015/620143

30 Andrews DQ, Naidenko OV. Environmental Science & Technology Letters. 2020;7(12):931-936. doi: 10.1021/acs.estlett.0c00713

31 Grandjean P, Timmermann CAG, Kruse M, et al. Severity of COVID-19 at elevated exposure to perfluorinated alkylates. *PLoS One*. 2020;15(12) e0244815. doi: 10.1371/journal.pone.0244815

32 Plastics pose threat to human health. News release. Endocrine Society; December 15, 2020. Accessed March 11, 2021. https://www.endocrine.org/news-and-advocacy/news-room/2020/plastics-pose-threat-to-human-health

33 Brown-West B. Amazon joins Walmart, other major retailers on safer chemicals. Environmental Defense Fund + Business. October 15, 2018. Accessed March 11, 2021. https://business.edf.org/insights/amazon-joins-walmart-other-major-retailers-on-safer-chemicals/

34 Walmart strengthens sustainable chemistry commitment, reports progress in safer product formulation. Walmart. September 27, 2017. Accessed March 22, 2021. https://corporate.walmart.com/newsroom/2017/09/27/walmart-strengthens-sustainable-chemistry-commitment-reports-progress-in-safer-product-formulation

35 Target: corporate statement on chemicals. Target. 2020. Accessed March 11, 2021. https://corporate.target.com/corporate-responsibility/planet/chemicals

36 CVS Health: removing chemicals of consumer concern. CVSHealth. May 18, 2017. Accessed March 11, 2021. https://cvshealth.com/news-and-insights/articles/removing-chemicals-of-consumer-concern

37 Walgreens: product integrity. Walgreens. 2021. Accessed March 11, 2021. https://www.walgreens.com/topic/sr/sr_product_integrity_home.jsp?cjevent=22c9a1f25f6b11eb80f700330a1c0e0b &CID=5250933&ext=9069228&PID=9069228&AID=11020894&SID=tuid%3A103AE7C0001C641306AEEB75041C67E5

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Vizient, Inc. provides solutions and services that improve the delivery of high-value care by aligning cost, quality and market performance for more than half of the nation's health care providers. Vizient provides expertise, analytics, advisory services, and a contract portfolio representing more than $130 billion in annual member purchasing volume, to improve patient outcomes and lower costs.

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Through the Environmentally Preferred Sourcing Program, Vizient provides the framework that advances sustainability efforts and supports the improvement of human and environmental health. The goal of our Environmentally Preferred Sourcing Program is to enable our members to better understand reasonable and achievable targets that are financially viable, environmentally sound, health improving and inspiring.