CATEGORY RESOURCE GUIDE

Sharps containers

Included in this document

(Click to view each section)

Vizient award overview

Awarded suppliers

MS4480 – Cardinal Health

Distribution

Both direct and distributed through the following distribution channels:

Medical-surgical

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Making supply uncertainty a thing of the past, not the future

To help members maintain supply assurance for essential products, Vizient shares insights via **category resource guides** on vizientinc.com. These category-specific documents contain comprehensive manufacturing, logistics and utilization insights to help members source supplies with confidence. Category resource guides are one way we're building supply assurance together.

Market landscape

According to Allied Market Research, the global sharps containers market size was valued at $430.8 million in 2021 and is projected to reach $632.8 million by 2031. The sharps container industry is anticipated to increase globally during the forecast period due to a rise in diagnostic and clinical tests. In addition, an increase in strict government regulations for disposal of medical waste is expected to further the drive sharps containers market growth during the forecast period.

The sharps containers market size is segmented based on type, container size, usage and region. The multipurpose, 2-4 gallons and the reusable containers segments were the major revenue contributors in 2021 and are anticipated to exhibit the fastest growth during the forecast period.

Key market players are Becton, Dickinson and Co., Bemis Healthcare, Bond Tech Corp., Cardinal Health, EnviroTain, GPC Medical, Harloff, Henry Schein, Stericycle and Thermo Fischer Scientific. Cardinal is continuing to add product lines. Recovery has been accomplished for 95% of the previously unavailable items.

Manufacturing insights

Product overview

Sharps disposal containers are made from rigid puncture-resistant plastic which also resists chemicals or liquid permeation or degradation, punctures, tearing abrasion and laceration, or they're made with metal with leak-resistant sides and bottom, and a tight-fitting, puncture-resistant lid, upright and stable with an opening to accommodate depositing a sharp but not large enough for a hand to enter. Containers are segmented into single-use and reusable containers.

Sharps are anything that can puncture the skin like needles, syringes, lancets, auto-injectors, infusion sets, connection sets, razor blades, scissors, metal wires, staples, pins, glass items and scalpels.

The National Institute for Occupational Safety and Health (NIOSH) suggest that there are four main criteria for sharps disposal container safety performance: functionality (durable, closable and leak resistant), accessibility (conveniently placed), visibility (see all labels and if filled) and accommodation (environmentally sound and easily stored/assembled).

Selection factors

Contract categories for sharps containers are the following:

- Large volume containers which are designed to accommodate sharps of all sizes. The containers are from 8 to 30 gallons.
- Phlebotomy containers are portable, 1-quart containers designed to fit into blood drawing trays for disposal of blood, hypodermic and IV needles.
- In-room (patient care) containers come in sizes ranging from 5 quarts to 4 gallons, usually with a horizontal drop lid, "mailbox" opening to accommodate used syringes. The opening prevents needles from popping out, overfill and retrieval of needles from the box.
- Chemotherapy yellow containers are dedicated to sharps or potentially sharp items which have been contaminated with chemotherapeutic, cytotoxic or oncologic material. If the lid is purple, it means that the material is intended for incineration only. The typical lid color is white.
- Pharmaceutical yellow containers are for medicinally contaminated sharps (other than cytotoxic or cytostatic drugs) and have a blue lid.
- Resource Conservation and Recovery Act (RCRA) hazardous containers are black and designed to segregate hazardous waste under the RCRA. The most common container is a 55-gallon drum. Examples of hazardous waste are fuel, batteries, cleaners, paint products and fluorescent light bulbs. Local, state and federal laws regulate how hazardous material is transported and stored.
- Noninfectious multipurpose (ancillary) containers are green and provide for the disposal of broken slides, glass lab bottles, swabs, dressings or incontinence waste. Noninfectious waste does not result in the spread of infection.

The NIOSH recommends selecting a container based on the following:

- Assessment of workplace hazards (biological, physical, chemical and radiological containment needs)
- Assessment of size and types of sharps to be disposed of
- Assessment of the volume of sharps to be disposed of at each point of use
- Assessment of frequency of sharps disposal container emptying and mounting bracket servicing by maintenance staff
- Compliance with federal, state and local regulations
- Security requirements
- Container transport or mobility needs
- Clinician and procedural variability and movement
- Laboratory equipment variability and movement
- Environmental and disposal constraints
- Cost considerations
- Continued evaluation of medical device technology, including ongoing changes in equipment design and barrier materials

The container size you choose must have enough room to store sharps safely between changes and the lid must accommodate the largest sharps you use. Overfilling significantly increases the risk of injuries so typically a container is considered full when it reaches three-quarters of its capacity.

The closure mechanisms should be designed to minimize exposure to contents and injury to the hand during engagement and transport. Sharps containers come with a variation of lids:

- The hinge cap requires that the user physically open and close the container with each use and the lid snaps closed with each sharp disposal.
- The horizonal entry allows for a wider entrance that enables you to dispose of larger sharps safely.
- The mailbox lid is hinged which allows it to close when the container is not in use.
- The “always open” lid is angled to prevent touching sharps and provides an extra barrier without requiring the user to open a lid.
- The side-entry lid features a slot that only allows sharps to go in through one side.
- The foot-operated lid provides easy access and disposal and is found on larger containers.

Waste containers come in different colors. Color coding reduces the risk of injury to staff, makes segregation of the medical waste easier, ensures proper treatment of the waste and contains disposal cost.

- Red containers represent biohazardous material (sharps, blood, body fluids).
- Yellow containers are for trace amounts of chemotherapy waste (personal protection equipment (PPE), IV bags).
- Blue containers are for nonhazardous pharmaceutical waste (pills, injectables).
- Black bins represent hazardous waste (cleaning solvents, radioactive waste, hazardous pharmaceuticals).

OEM and manufacturing location

Cardinal is the largest original equipment manufacturer (OEM). The sharps containers are domestically produced in Illinois and Indiana.

Raw materials

The containers are made of rubber (some flanges), metal (brackets), polypropylene and other resins, which are a byproduct of natural gas or crude oil. Hardware brackets are made of metal.

Shortages of raw materials persist but have eased slightly since the height of the pandemic. Polypropylene resin supplies have been affected by increased demand, labor issues and shipping container shortages, as well as the effects of a December 2020 fire suffered by a major resin supplier. Some SKUs are healthy. Demand due to vaccinations remains steady.

Resin availability is getting better, but the cost has increased. Corrogate for boxes also is made of raw materials with prices that have increased 50 to 60%, but availability is not an issue. Lastly, labor issues are contributing to the slowdown. It is difficult to find qualified labor.

The lastest manufacturing insights are available here.

Regulatory and approvals

Device manufacturers and user facilities must comply with the applicable Medical Device Reporting (MDR) regulations.

Sharps disposal containers are regulated as class II medical devices by the U.S. Food and Drug Administration (FDA) [21 CFR 860.3]. The OSHA bloodborne pathogens standard establishes minimum design performance elements for sharps disposal containers [29 CFR 190.1030(d)(4)(iii)(A)]. Class II devices are subject to special controls, such as performance standards, to ensure their safe and effective use.

OSHA requires that containers for contaminated sharps be closeable and puncture resistant. The sides and the bottom must be leakproof, and they must be appropriately labeled or color-coded red to warn everyone that the contents are hazardous.

There are acceptable alternative containers that are not FDA approved, but they must meet the OSHA bloodborne pathogens standard requirements. Some of these alternatives may be found on the Strategies for Sharps Disposal Container Use During Supply Shortages. This consideration can only be undertaken after checking your state's specific disposal requirements at SafeNeedleDisposal.org and discussing disposal options with your medical waste vendors. Use of these would be a last resort. There are stickers to affix to these alternative items.

Non-awarded suppliers

BD is prominent in the primary care space but has reduced its footprint in the acute care market. Medline, Bemis and DeRoyal are smaller market players. However, Medline is enhancing its market position through distribution wraparounds, which demand increased capacity and depth and breadth of product.

Non-contracted suppliers, Grainger, VWR and Global Industrial, distribute sharps containers from various OEMs. Oakridge is an OEM. These companies do not have awarded Vizient contracts. They provide reusable sharps containers and have a waste management program that entails collection, cleaning and returning. This is probably the most viable alternative in a crisis shortage.

Logistics insights

Transportation/shipping

Cardinal sharps containers are transported via domestic trucking, rail and occasionally air, so customs and port delays do not affect the supply chain. However, an oil rig fire or any other *force majeure* disruption in oil or natural gas production would impact the availability of the raw materials.

Distribution centers (DCs) are called Cardinal Regional RCs (replenishment centers). There are 23 forward-facing DCs across the country.

The resins are from Texas.

These are distributed and ordered direct. The acute and primary care markets overwhelmingly use distribution channels (vs. direct purchase).

These are made in the U.S. Fuel and labor shortage prices continue to affect trucking rates. Shipments include raw materials like resin from Texas that must be transported to the manufacturing facility in Illinois. Volume of this commodity has exponentially increased due to vaccine administration and other COVID-19-related after-effects.

See additional freight updates here.

Product storage

There are no special storage requirements.

Facilities generating less than 20 pounds of biohazardous waste per month may store the waste onsite at or above 32 degrees F for up to 30 days. Biohazardous or sharps waste may be stored onsite at or below 32 degrees F for up to 90 days without obtaining prior written approval from the enforcement agency.

Sharps containers may be found as stackable or non-stackable. Stackable containers are easier to store in large quantities.

Utilization insights

Clinical contract support resources

Protecting Yourself When Handling Contaminated Sharps – OSHA

An Informational fact sheet on how to protect yourself when handling contaminated sharps.

Strategies for Sharps Disposal Container Use During Supply Shortages – Centers for Disease Control and Prevention (CDC)

An informational document on conservation strategies for sharps containers.

Sharps Disposal Containers in Healthcare Facilities – FDA

This site offers tips for proper handling and disposal of containers as well as other helpful resources.

Sharps Safety for Healthcare Settings – CDC

This site offers a workbook and teaching tools for evaluating sharps injuries.

Building supply assurance

Potential supply vulnerabilities

Supply vulnerabilities are reduced as the finished goods and raw materials are manufactured domestically. The largest supply disruption is weather, including hurricanes in the gulf and snow in the Midwest. The disruption to oil drilling in the Gulf can extend beyond the weather event if there is damage to the platform.

Conservation strategies

- Cardinal can be nimble with refined, focused production on high runners. That agility extends to switching lines to accommodate/expand capacity of the high runners.
- Consider avoiding timed sharps container disposal, where containers are removed at set intervals regardless of fill level. Removing and replacing sharps disposal containers based on set time intervals rather than when they are at the recommended capacity can waste valuable container space during a shortage.
- Ask your distributors about all types of FDA-cleared sharps disposal containers that are available. For example, using an FDA-cleared sharps disposal container that does not fit within the wall brackets at your facility is better than not having a sharps disposal container at all.
- Consider using alternative containers, after checking your state's specific disposal requirements at SafeNeedleDisposal.org and discussing disposal options with your medical waste vendors.

Because predicting the next supply shortage is impossible, it is important that healthcare providers not only adopt and implement care practice strategies to conserve critical products and supplies, but it is also equally as important to sustain leading practices that will help ensure the availability of essential products post recovery and in the future. Healthcare providers and other leading organizations have identified and recommend the following actions:

- Fair share and large order quantity limits when needed.
- Monitor purchases to preclude overordering.
- Enhance pre-production efficiencies by securing additional raw materials, and if possible, add sources of supply.
- Cross-training staff ensures productivity is stable or can be ramped up.

Additionally, with other products and services do the following:

- Assess and identify all hospital services.
- Identify and list critical products, supplies and resources required to sustain operation of those areas identified and ranked in the first step.
- Maintain the internal planning team document with accurate information. Review and update the document on a routine basis with current employee contact information. If a team member no longer works in the organization, identify the replacement and communicate the information to all stakeholders.
- Communicate practice changes and procedures frequently to staff and stakeholders.
- Hold regularly scheduled planning meetings in the absence of a supply chain shortage or event. This will help to ensure that identified processes and protocols remain relevant and any issues requiring revisions and/or updates are addressed in advance of a shortage or disaster.

If your organization has implemented conservation strategies for sharps containers, or any other category, share your information here. The information you share will be anonymous unless you grant Vizient permission to share.

Supply chain programs

Domestic sourcing

Cardinal Health (MS4480) is participating in the Vizient Domestic Sourcing offering, which is the recently launched Vizient initiative that identifies domestically manufactured products to diversify your supply chain and bolster your continuity plans. For more information, click here.

Novaplus

Cardinal Health (MS4480) is a Vizient Novaplus® supplier. Through Novaplus, access to products goes deep with more than 15,000 individual line items – including numerous high-demand items. The brand encompasses a broad range of categories needed across the care continuum, such as anesthesia, business products and services, diagnostic imaging, food, laboratory, medical, orthopedic, pediatric, pharmacy, respiratory and surgical. Today as the capabilities, expertise and purchasing power of Vizient grow, we offer expanded value so you unlock even more from your private-label purchasing. For more information, click here.

Planning for disruptions

Distributor recommendations

Ask your distributors about all types of FDA-cleared sharps disposal containers that are available. For example, using an FDA-cleared sharps disposal container that does not fit within the wall brackets at your facility is better than not having a sharps disposal container at all.

The FDA may have an emergency list of containers approved during states of emergency.

Best practice strategies

- Do not remove, recap, break or bend contaminated needles or separate contaminated needles from syringes before discarding them into a sharps disposal container. Best practice is to immediately place the connected needle and syringe into the sharps disposal container.
- Place contaminated dressings, gauze, cotton materials, tubing and contaminated cleanup items in biohazard waste disposal bags.
- Place uncontaminated non-sharps in a standard trashcan. Always place sharps in sharps disposal containers, not in the standard trash.
- Consider using reusable FDA-cleared sharps disposal containers. These can be reused after being picked up, processed and disinfected by a regulated medical waste removal service according to state and local regulations.
- Ensure containers are filled to the recommended capacity prior to removal but do not overfill. Filling above the fill line or more than three-fourths full of the alternative container can increase the risk of a needlestick injury and bloodborne pathogen exposure.
- Follow the manufacturer's instructions for use.

Vizient offers the following best practices to help members manage disruptions. These suggestions are available to help you gain insight on how the industry is managing supply challenges.

If your inventory is low

Vizient is committed to bringing hospitals, manufacturers, distributors and the industry together to talk about this issue and any long-term implications. We feel continued dialogue about the issue by experts, including hospitals, manufacturers, distributors and industry, will be crucial to ultimately arriving at a solution to the vexing issue. During critical supply periods, members should continue to order their normal levels of products in order to ensure continued availability for all institutions.

If you begin to experience a shortage, do the following:

- Evaluate your current supply.
- Contact your local supplier representative and report exactly how many days' supply you have left.
- If you are not getting a response from suppliers, contact Vizient so we can facilitate communication between member and supplier; provide whether you are ordering direct or through distribution (med/surg or pharmacy), and indicate supplier and distributor (if applicable) when you contact Vizient.
- We encourage you to continue the conversation within your organization, with your peers and with the manufacturers and distributors.
- Submit inquiries to disasterresponse@vizientinc.com.

Expedite supply resolution

To expedite resolution for supply issues, contact your local supplier and provide the following information:

- The description and item number of the product that is experiencing a shortage
- Whether you are purchasing directly or through an Authorized Distributor
- Days' supply remaining in your inventory

If expanding your facility

We suggest members notify suppliers when expanding their facilities to assist in planning and anticipate increases in allocations. You should consider notifying your suppliers at least three months ahead of the completion of your facility to ensure sufficient capacity.

Building supply assurance together

Collaboration among suppliers, distributors, members and Vizient strengthens the assurance of supply for all stakeholders. Our wealth of experience, actionable data and predictive planning helps to strengthen supply assurance. Further, our work with stakeholders focuses on improving supply chain risk mitigation as we collaborate to enhance data, increase supply visibility and expand inventory access.

Four themes keep us centered and are the pillars of our supply chain assurance efforts: insights, access, enablement and advocacy. Learn more about our supply assurance strategy.

In the event of a supply disruption, Vizient will publish a product disruption brief to the Supply Assurance webpage. Curated by Vizient experts, these documents provide a summary of current conditions and strategies to manage product-level disruptions.

In addition to our disruption briefs, Vizient also compiles all known disruptions into the monthly Supply Update Executive Summary which tracks all supply chain disruptors, including current market challenges, category-specific product updates and recovering markets.

Whether a supply disruption is the result of a natural or human-made disaster, it is imperative that members are informed. The Vizient Disaster Preparedness webpage was developed to help providers meet supply chain needs before, during and after an event. The Supply Update section of the guide is updated on a frequent and routine basis with communication from all awarded suppliers that have manufacturing facilities in areas impacted by a disaster. Additionally, a status update list of those manufacturers whose operations have been affected, as well as a list of impacted product(s), will be maintained and updated as that information is received from supplier.

The importance of an internal planning team

Identifying an internal planning team is imperative to managing supply, mitigating risks and sustaining operations during a supply shortage. According to the Supply Chain Disaster Preparedness Manual developed by the CDC, internal teams should consist of representatives from supply chain, purchasing, emergency management, each clinical/care delivery area, inventory staff, receiving and distribution staff. Relative to medication and solutions, Vizient member feedback indicated the pharmacy department as an integral member to the internal team, as clinical/pharmacy practice changes may occur. Additional members may include the facilities safety manager, security, risk management, legal, marketing and communications, and public relations.

A simple internal team planning document will help to identify, contact and quickly convene relevant team members. See the sample below:

Name	Title	Department/role	Phone	Email

Once an internal team is identified, additional considerations before beginning the development and implementation of a recovery plan include the following:

- The team's goals
- The responsibilities of each planning team member
- Other department/team members who may need to be involved
- Frequency of team meetings
- How the goal/mission be accomplished
- How information will be documented and communicated to the broader audience
- A current framework for success either within your facility or from a leading organization

Stakeholder communication

During supply chain product disruptions, it is vital that accurate and timely information is disseminated to internal and external stakeholders. The following actions should be considered in an effort to facilitate and ensure informed decisions:

- Designate the point person or persons who will be responsible for developing, disseminating and monitoring all communications coming from the internal planning team.
- The internal planning team should collaborate key messages/information to stakeholders, such as changes in policies and/or practice changes.
- Clearly communicate the roles and responsibilities of all staff based on the agreed upon recovery plan. If there are changes to the plan at any time, timely communication of those changes will help to increase risk mitigation and minimize interruption of patient care.
- Establish communication mechanisms for information exchange. Examples include but are not limited to regularly scheduled briefings and meetings, in-services, staff trainings, live/recorded webinars, memos and emails.
- Determine the frequency of reminders and updates regarding supply disruption status and anticipated resolution.
- Frequent updates and reminders after a supply disruption has been mitigated or eliminated help to ensure ongoing success and sustainability of best practices.

Supply management and logistics

A leading practice identified in managing recent shortages is a centralized management approach of impacted product codes. A key responsibility of the internal planning group is to identify all affected product codes and to determine the amount of supply on hand, expected and any allocation protocols implemented by the supply source. Once the current product status is determined, the following actions are recommended:

- Update and maintain an accurate inventory list. Each care area that utilizes any product code on the inventory list should identify a point person to collect on hand and usage levels on an agreed upon frequency. That information should be reported back to the internal planning team. Inventory can either be managed by care delivery areas or in a centralized manner.
- Identify space in the facility to store, manage and distribute product. Designate authorized personnel responsible for maintaining the inventory (expiration dates temperature, ventilation, utilization, equipment maintenance and repair, etc.).
- Develop and seek approval for the inventory management protocol and communicate this information to all stakeholders.
- Update and maintain accurate purchase order and allocation protocols from the contracted supplier and your group purchasing organization (GPO).

- Update and maintain accurate emergency contact information for all suppliers as well as internal stakeholders. This process should be done at least every six months.
- Review the inventory management status on an agreed upon frequency with the internal planning group. Assess for barriers to its effectiveness, implement any changes necessary and communicate those changes to all stakeholders.

Planning for all levels of care and ancillary products

Feedback from lessons learned indicated the need to include all levels of care and ancillary products, if applicable, in the conservation plan. If your provider system has children's hospitals, ambulatory surgery centers, outpatient clinics and/or long-term care facilities, utilization and logistics of products and supplies must be incorporated into the plan. Additionally, it is vital that ancillary products are considered when contemplating allocations and purchase orders. During the recent drugs and solutions shortages, as large volume solution bags went on back order, smaller volume bags, compounding products, and syringes also went on back order because of practice changes. Therefore, conservation planning should include actual and the additional ancillary products that may be required to sustain a clinical and/or operational practice change

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