CATEGORY RESOURCE GUIDE

Blood pressure cuffs

Included in this document

(Click to view each section)

Vizient award overview

Awarded suppliers

MS8031 – GE Medical
MS8032 – Welch Allyn

Distribution

Both direct and distributed through the following distribution channels:

Medical-surgical

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Questions? Contact supplyassurance@vizientinc.com, pharmacyquestions@vizientinc.com, novaplus@vizientinc.com.

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 profiles are one way we're building supply assurance together.

Market landscape

The global disposable blood pressure (BP) cuffs market size was estimated at USD 276.14 million in 2022 and is expected to reach USD 306.13 million in 2023 and then grow at a compound annual growth rate (CAGR) of 12.2% from 2023 to 2030. Increasing incidences of hypertension due to changing lifestyles are contributing to the market growth during the forecast period. Moreover, the demand for disposable BP cuffs is very high due to the growing elderly population and increasing risk of lifestyle-associated disorders among the general population due to the rising incidences of obesity and sedentary lifestyle. In addition, increasing incidence of cross contaminations in healthcare facilities is another key contributing factor that drives the disposable market growth. Per the World Health Organization (WHO) healthcare-associated infections (HAIs) fact sheet, hundreds of millions of patients are affected by HAIs worldwide each year. These factors that lead to growth in the BP market augment the need for cuffs that attach to vital signs machines (automatic BP). Automatic measurement is the predominant method in North America and most developed countries.

Manufacturing insights

Product overview

The disposable BP cuffs market is segmented by type (disposable or reusable), by size (micropreemie, newborn, child, and adult small, medium, large, obese and some sizes have longer versions), and by application (hospital, clinic, home).

Historically, the usage can be further broken down into four categories: single patient use (disposable), limited reuse (used repeatedly by a single patient during their hospital stay), hospital reusable (cleaned and reused for multiple patients; use limited to 3 years[1]) and general care reusable (multiple patient use with limited cleaning). Historically, “general care reusable cuff” was the only designation as all cuffs were reused and the fabric had limited ability to be cleaned. This now represents a dwindling practice given recent infection prevention strategies as cited in a 2018 article about reusable cuffs in ORs.)[2].

Clinical guidance from the 2008 Massachusetts Department of Public Health recommended that disposable BP cuffs be used in acute-care hospitals, spurring the almost full transition to disposable cuffs.

BP cuffs can be used with a multitude of sphygmomanometers. Sphygmomanometers come in many forms and are the gauge used with a cuff when taking BP manually. Using a stethoscope placed over the brachial artery, the cuff is inflated 20 mm Hg after the last pulse beat is heard. The cuff is then deflated slowly. When the pulse is heard, the corresponding number on the gauge is the systolic BP; when the pulse is no longer heard, that number is recorded as the diastolic BP.

Aside from manual method, the automatic method is most commonly used. With automatic readings, the BP cuff is attached to a portable vital signs machine or a patient monitor. In either case, a button is pressed, the cuff inflates and deflates automatically, and then the BP value is viewed on the screen.

Home use BP cuff machines are gaining in popularity due to increased comorbidities among the aging and general population. These devices are predominately handheld and operate similarly to the other “automatic” systems.

Selection factors

Correct cuff size is the most important factor in blood pressure measurement. Using a wrong-size blood pressure cuff can affect accuracy by up to 30 mm Hg. The American Heart Association recommends a cuff bladder width of 40% of the arm circumference and a cuff bladder length of 80% of the arm circumference.

OEM and manufacturing location

Original equipment manufacturers (OEMs) on contract are GE and Baxter/Welch Allyn.

- Welch Allyn is moving all BP cuff production to Tijuana, Mexico, from New York.
- GE manufactures in Ciudad Juárez, Chihuahua, Mexico, and distributes out of El Paso, Texas.

1 GE article

2 Innovation Info article

Raw materials

- PVC plastic, steel
- GE's new One-Cuf: 40% less fabric and 45% less PVC, lessening the environmental impact

The lastest manufacturing insights are available here.

Regulatory and approvals

The items in this category conform to the ISO 81060 non-invasive blood pressure (NIBP) cuff sizing standard.

Regulations dictate reusable vs. disposable. Resuable cuffs can be cleaned between different patients.

Disposable should be used by one patient only. It can remain with the patient throughout the hospital stay and can also be cleaned.

Cleaning procedures for every product can be found in the directions for use on each company's website:

- Welch Allyn/Hill-Rom
- GE Healthcare

Non-awarded suppliers

- Medline
- Sun-Tech
- Technicuff
- Cardinal

Some of these companies sell their branded cuffs and also sell to others for private labels, or brand their cuff with another company's logo. These suppliers all have full lines of disposable and reusable BP cuffs and accessories.

Logistics insights

Transportation/shipping

Manufacturing is near shore (seven miles) so the major mode of transport is freight and rail through customs – also the same modes of transport domestically.

The U.S.-Mexico border crossing, El Paso Paso del Norte (PDN) Port of Entry, connects the El Paso with Juárez.

Expedited orders by air require the member/recipient to pay for shipping costs.

See additional freight update here.

Product storage

No restrictions or special storage is needed as products are not sterile, and they are placed inside individual plastic bags after manufacture.

Utilization insights

Clinical contract support resources

U.S. Food and Drug Administration (FDA) NIBP Monitor Guidance

Centers for Disease Control and Prevention (CDC) Health Tech/Blood Pressure Procedure Manual

CDC Blood Pressure Health Strategies by Condition

Building supply assurance

Potential supply vulnerabilities

Near-shore manufacturing precludes the issues attendant to overseas transport, such as port congestion and diversion due to inclement weather.

Sourcing for raw materials and maintaining several weeks of inventory of high runners at all times help maintain availability.

There is a potential for strikes as about 90% of Mexican workers are unionized. Current demands of those workers to increase wages (which had not kept pace with inflation) were met after the threat of strike.

Conservation strategies

Because predicting the next supply shortage is impossible, it is important that healthcare providers not only adopt and implement care practices strategies to conserve critical products and supplies, but it is equally as important to sustain leading practices that will help ensure the availability of essential products post recovery and in the future. For example, hospitals have emphasized conservation strategies which limit one cuff per patient stay. This discourages the historically recent practice of discarding BP cuffs during intra-department transfers. Ideally the cuff used in the emergency department (ED) should remain with the patient through discharge. To encourage appropriate reuse, approved cleaning methods are disseminated and have become part of clinical practice.

Bulk buying for extended storage is another strategy, but less attractive as first-in, first-out (FIFO) practices with long-term storage are difficult to incorporate into the supply chain. To preclude incompatibility issues, bulk buys should be procured from the incumbent supplier so each BP cuff has a proprietary adapter to connect to modules, portable VS machines and bedside monitors. Using another brand would require the purchase of its adapters. For this reason, if a secondary source is identified as a backup, it is crucial that its adapters are secured as well. In addition, educational awareness prior to using a new adapter would be necessary.

Healthcare providers and other leading organizations have identified and recommend the following actions:

- 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 blood pressure cuffs, 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

Impact Standardization

GE and Welch Allyn participate in the Impact Bedside Care Standardization Program, which improves procurement processes on commonly purchased products and financially rewards standardization efforts while reducing product variation and improving procurement processes on commonly purchased products. Since 1996, members have earned more than $1.5 billion in cash rebates through the programs. With 12 programs to choose from and built-in flexibility within each program, it's easy to gain additional value beyond price for your organization. For more information, click here.

Novaplus

Welch Allyn 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

Historical Welch Allyn manufacturing is being moved from New York to near-shore to maintain close oversight. If supplies are stressed for any reason, allocation of product, adding manufacturing lines, adding labor, increasing shifts, expanding manufacturing hours, and buying raw materials in bulk are proven strategies that have been and will be employed.

Best practice strategies

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 around the issue by experts – hospitals, manufacturers, distributors and industry – will be crucial to ultimately arriving at a solution to vexing issues. 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:

- 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 (medical/surgical 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 to identify ways to manage your ongoing needs.
- 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 the 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 will 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. For example, 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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