

# **Closed System Transfer Devices Market by Type (Membrane-to-Membrane, Needleless), Technology, Component (Vial Access Device, Male Luer, Bag Spike, Female Component), End User (Hospitals & Clinics, Oncology Center) - Global Forecast to 2029**

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## **Abstracts**

The closed system transfer devices (CSTDs) market is projected to reach USD 2.5 billion by 2029 from USD 1.1 billion in 2024, at a CAGR of 14.5%. The heightened awareness and concern for healthcare worker safety, there is a growing market demand for closed system transfer devices. Healthcare facilities are increasingly investing in these devices to enhance safety protocols and protect their staff from the risks associated with handling hazardous drugs. Consequently, this increased demand is expected to drive the growth of the closed system transfer devices market as healthcare providers prioritize safety measures to safeguard their workforce.

Based on the closing mechanism, the color-to-color alignment system segmented is expected to grow by the highest CAGR in the CSTDs market.

Color-to-color alignment systems design incorporates a pressure equalization mechanism, effectively preventing leaks, spills, and the release of hazardous substances, thus enhancing safety and operational efficiency. Additionally, compared to alternative mechanisms, such as click-to-lock or push-to-turn systems, color-to-color alignment systems are more cost-effective, making them an attractive option for healthcare facilities, particularly those mindful of budget constraints. Furthermore, their user-friendly nature, facilitated by clear visual cues, simplifies the connection process for healthcare workers, minimizing the risk of errors and facilitating smoother transfers.

Based on type, the membrane-to-membrane system segment is expected to grow with

the highest CAGR in the closed system transfer devices market.

These systems offer a straightforward mechanism that simplifies the transfer process, making them attractive to healthcare professionals seeking efficiency and convenience. Additionally, the membrane-to-membrane systems significantly reduce the risk of contamination during drug transfers, enhancing safety protocols within healthcare settings. Therefore, these factors are fueling the expansion of this segment within the CSTD market, pointing towards a positive future for this technology.

Based on technology, the diaphragm-based devices segment accounted for the largest market share of the CSTD market. Owing to their superior safety features, compatibility with various drug delivery systems, and ease of use diaphragm-based devices are expected to drive the CSTD market. These devices offer enhanced protection for healthcare workers and patients by creating a sealed environment during hazardous drug transfer, thus minimizing the risk of exposure. With increasing awareness of safe drug handling practices, healthcare facilities are expected to adopt diaphragm-based CSTDs more widely to ensure the safety of their personnel and patients.

Based on components, the vial access components segment accounted for the largest share of the closed system transfer devices market. Vial access components play a key role by minimizing the risk of needlestick injuries for healthcare workers and preventing contamination of medications during transfer. Moreover, their ease of use allows for faster medication preparation and reduces the risk of errors associated with traditional open systems. Therefore, by addressing both safety concerns and efficiency needs, Vial access components segment is expected to drive the market growth.

Based on end users, the hospitals & clinics segment is accounted for the largest share of the CSTDs market. Compared to other healthcare settings, hospitals and clinics generally have a larger budget for medical equipment. This allows them to invest in the latest CSTD technologies, ensuring compliance with safety regulations and best practices. Moreover, hospitals and clinics are subject to stricter regulations regarding medication handling and worker safety. CSTDs help them meet these requirements by minimizing the risk of exposure to hazardous drugs and preventing medication errors.

North America to register for the highest share of the CSTD market during the forecast period.

Owing to the regions heightened awareness among healthcare professionals regarding the importance of safe drug handling practices along with a robust infrastructure for

healthcare and stringent regulatory standards, North America has been at the forefront of adopting advanced medical technologies to enhance patient care and safety. The increasing utilization of CSTDs in North America can be attributed to their effectiveness in minimizing the risk of exposure to hazardous drugs, thereby safeguarding the health and well-being of healthcare workers and patients alike. As awareness continues to grow and healthcare facilities prioritize safety measures, North America is expected to maintain its dominance in the CSTD market, reflecting its commitment to ensuring optimal standards of patient care and safety.

A breakdown of the primary participants (supply-side) for the closed system transfer devices market referred to for this report is provided below:

By Company Type: Tier 1–42%, Tier 2–37%, and Tier 3–21%

By Designation: C-level–39%, Director Level–33%, and Others–28%

By Region: North America–64%, Europe–17%, Asia Pacific–7%, Latin America–6%, Middle East & Africa–6% .

Prominent players in the closed system transfer device market are Becton, Dickinson and Company (US), ICU Medical, Inc. (US), Equashield LLC (US), Simplivia Healthcare (Israel), Corvida Medical (US), Yukon Medical (US), JMS Co., Ltd. (Japan), Baxter International (US), Corning Incorporated (US), B Braun Melsungen AG (Germany), West Pharmaceuticals Services (US), Terumo Corporation (Japan), CODAN Medizinische Geräte GmbH (Germany), Victus (US), Caragen (Ireland), Cardinal Health (US), Eraser Medical (Turkey), Vygon SA (US), Practivet (US), and Insung Medical (South Korea).

Research Coverage:

The report analyzes the closed system transfer devices market and aims at estimating the market size and future growth potential of this market based on various segments such as closing mechanism, type, component, technology, end user, and region. The report also includes a competitive analysis of the key players in this market along with their company profiles, product offerings, recent developments, and key market strategies.

Reasons to Buy the Report

The report will help the market leaders/new entrants in this market with information on the closest approximations of the revenue numbers for the overall the closed system transfer devices market and the subsegments. This report will help stakeholders understand the competitive landscape and gain more insights to position their businesses better and plan suitable go-to-market strategies. The report also helps stakeholders understand the pulse of the market and provides them with information on key market drivers, restraints, challenges, and opportunities.

This report provides insights into the following pointers:

? Analysis of key drivers (growth in the closed system transfer devices market in developing countries, rising cancer rates, focus on patient and worker safety, growing use of CSTDs beyond oncology, and increasing use of hazardous drugs), restraints (high cost of implementation, and limited reimbursement policies), opportunities (integration with automation, and data-driven CSTDs) and challenges (inconsistency in regulatory guidelines, and compatibility issues with certain drugs)

**Market Penetration:** It includes extensive information on product portfolios offered by the major players in the global the closed system transfer devices market. The report includes various segments in market closing mechanism, type, component, technology, end user, and region.

**Product Enhancement/Innovation:** Comprehensive details about new product launches and anticipated trends in the global the closed system transfer devices market.

**Market Development:** Thorough knowledge and analysis of the profitable rising markets by closing mechanism, type, component, technology, end user, and region.

**Market Diversification:** Comprehensive information about newly launched product and services, expanding markets, current advancements, and investments in the global the closed system transfer devices market.

**Competitive Assessment:** Thorough evaluation of the market shares, growth plans, offerings of product and services, and capacities of the major competitors in the global the closed system transfer devices market.



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