

Almost all hospitalized patients, as well as many outpatients, require some form of intravenous (IV) catheter, these small plastic tubes are used for administering medications, fluids, nutrition, or blood transfusions, drawing blood samples, or performing dialysis for patients with kidney failure, IV lines are generally categorized into two types: peripheral and central. Implanted catheters, designed for long-term use, can be tunneled, with a cuff at the skin entry to form a fibrous barrier against pathogens, or they can be PORTs, which feature a subcutaneous reservoir accessed via needle puncture through the skin (Williams L, 2005). CRT, This pertains to the formation of blood clots in the veins and vessel walls surrounding the catheter, due to puncture or mechanical injury to the vessel's inner lining or as a result of the patient's underlying medical condition with the rapid advancement of intravenous infusion technology, central venous catheterization has emerged as an essential component of modern medical practice (Citla Sridhar D, 2020). A peripherally inserted central catheter (PICC) is another central catheter commonly used in hospitals, inserted into a small vein in the upper arm and ending in the superior vena cava, where the veins from the neck and arm converge with the heart (Evan N, 2018). Central venous access devices (CVADs) can be classified based on factors such as duration of use, tip location, number of lumens, or insertion site Culverwell (E, 2022). As primary healthcare providers offering direct patient care and spending significant time with individuals, nurses hold a pivotal position in effectively identifying, preventing, and managing VTE in clinical settings (Yan T. 2020). Multiple factors could contribute to the observed increase, such as population aging, shifts in lifestyle, heightened awareness, and improved detection methods. CRT risk factors can be grouped into those associated with the catheter, the insertion procedure, and patient-related factors, reflecting Virchow's triad of endothelial injury, blood flow stasis, and hypercoagulability (Saber, W., 2011). Hospitalization rates for VTE increased from 3.2 to 17.5 per 100,000 people (Zhang et al., 2019). Summary