



## New Technology in Phlebotomy

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In 2016, a new device was introduced into the market. Its purpose was to reduce the number of venipunctures required during a hospital patient's stay, improve the quality of blood samples collected from IV lines, and provide an overall safer and more positive experience for patients and phlebotomists alike.

This device is known as the PIVO system, created by [Velano Vascular](#). It is a needle-free single-use device designed to collect high-quality blood samples from an already existing peripheral IV. The PIVO device attaches to the IV, a plastic catheter is advanced past the end of the IV catheter and into the blood vessel. Blood is then collected into a syringe or into vacuum tubes, and then when the procedure is complete, the device is removed. IVs are not negatively affected by the insertion of the PIVO device and remain in place just as they usually would.

This extraordinary innovation has many positive aspects to consider. Without PIVO, an inpatient may be required to have their blood drawn multiple times a day. It is no secret that one of the main complaints we hear from patients is that they end up feeling like a bruised and sore pin-cushion by the time they leave the hospital. Statistically, most children are afraid of needles, and according to [this PubMed article](#), studies have shown that 20-50% of adolescents have a fear of needles. As people age, their fear of needles usually recedes, but having blood drawn is still generally considered a negative experience for a patient. The PIVO system reduces the number of peripheral venipunctures typically required for an inpatient and thereby increases their satisfaction regarding the procedure.

The PIVO device is also safer to use due to the absence of a needle. There are accidental needle-stick exposures daily all over the world. [Velano Vascular reports](#) that in the US alone, there are over 1000 needle-related injuries every day. Imagine what this number could look like if every



hospital implemented needle-free blood drawing devices as an option for specimen collection. It doesn't completely eliminate the risk of exposure, but it has the potential to reduce it, and that is something worth noticing

One of the most significant benefits of the PIVO system is that it greatly reduces the occurrence of hemolysis from indwelling line draws. Collecting blood from an established IV is something most people are taught to avoid because of the risks of contamination, dilution, and of course, hemolysis. When the PIVO device is inserted into the IV, it is advanced beyond the tip of the catheter into an area where blood collection is optimal. A high-quality sample can be obtained without inflicting further pain to our patients and instead utilizing an access device that is already in place.

Dennis Ernst, the Director of The Center for Phlebotomy Education and a world-leading expert in the field of phlebotomy, has created an informational video about the PIVO system, and we have included it here for you.

[\(Youtube link\)](#)

No device can replace the contributions phlebotomists make to quality healthcare. Yet innovations like the PIVO system are a big step forward in enhancing the value of phlebotomists to the healthcare team, improving the patient experience and optimizing specimen quality. Our jobs become easier when we leverage technology. When innovations like this change how blood is collected at your facility, embracing it is embracing your future.

Article written by Shanise Keith

Citations:

Velano Vascular Home Page

Velano Vascular. 2021. *Velano Vascular | PIVO Needle-Free Blood Draw Technology*. [online] Available at: <<https://velanovascular.com/>> [Accessed 1 June 2021].

Pub Med Article

McLenon J, Rogers MAM. The fear of needles: A systematic review and meta-analysis. *J Adv Nurs*. 2019 Jan;75(1):30-42. doi: 10.1111/jan.13818. Epub 2018 Sep 11. PMID: 30109720.

Velano Vascular Evidence Page



Guest Contributor for the BCCLS 'UNDER THE MICROSCOPE' Enewsletter  
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Velano Vascular. 2021. *Evidence | Velano Vascular | PIVO Needleless Blood Draw Solution*. [online]  
Available at: <<https://velanovascular.com/evidence/>> [Accessed 3 June 2021].

YouTube Video

Ernst, D., 2020. *Drawing Blood From an IV Line Without Hemolysis*. [online] Youtube.com. Available at:  
<[https://youtu.be/N6tEZ\\_SLLZc](https://youtu.be/N6tEZ_SLLZc)> [Accessed 30 May 2021].