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# Point Taken

**COMPLY OR PAY THE PRICE**

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By Ron Stoker



I was visiting my wife in her hospital room shortly after her recent surgery. (Lest anyone wonders, I had washed my hands with alcohol gel as I entered her room.) As my wife and I were talking, several times nurses came in to take her vital signs. My gentle reminder set them in motion to wash their hands before touching my wife; this never ceases to amaze me, since this practice should be second nature by now. Nevertheless, the conversation with the nurses typically turned to needlesticks and sharps safety products, and this same discussion was repeated with each new nurse over the course of the next several days. As you can guess, most of these clinicians had their own needlestick horror stories.

One of the nurses had just finished a rotation at a local children's hospital. She indicated that one of her colleagues had inserted an IV needle into a sick 2 year old at the children's hospital. Apparently, the little girl did not like the needle in her own arm and, reaching up with her other hand, removed the needle and promptly stuck it into the arm of her nurse. I guess she was trying to get even!

Almost 90% of patients entering the hospital have some form of intravenous therapy given to them during their stay. IV catheters are used to deliver IV medications, blood products, and nutritional fluids to patients. A standard perioperative procedure is to place an IV catheter into a patient prior to surgery. The routine can make it easy to get complacent about what you are doing.

Perioperative nurses should always be vigilant when placing IV catheters since hollow-bore needles present the greatest potential for acquiring an occupational bloodborne disease. Safety products are available and should be used by perioperative nurses. These safety products provide a safe environment for nurses as well as providing a conduit to provide medications for their patients.

### **Active and Passive Safety Features**

It is important to understand the difference between active and passive safety features. “Active” safety features require the user to actuate or activate the safety features that ensures that the needle or sharp is isolated after use. This activation of the safety feature can often be completed before the needle is removed from the patient. Most devices, however, require that the activation of the safety feature be performed at the end of the procedure.

Safety products with “passive” safety features do not require any activation by the user; the safety feature is automatically activated as part of the procedure.

Regardless of the choice of passive or active safety feature, it is important for every healthcare institution to frequently review new safety products. Part of the requirements of the Bloodborne Pathogen Standard is that each institution will update its plan at a minimum of once each year with the documented evaluation of new safety technologies.

Another important aspect of the Standard is that each facility will “reflect changes in technology that eliminate or reduce exposure to bloodborne pathogens.” It is important for healthcare facilities

to frequently evaluate and start using safety products including those used for intravenous administration of drugs.

### **It’s a Jungle Out There**

Many healthcare institutions have made some changes in regards to their evaluation of safety and are in compliance. Unfortunately not all hospitals are in compliance. In fact, during the period October 2003 through September 2004, OSHA issued 1,028 citations for violations of the Bloodborne Pathogen Standard. My own observance has indicated that safety products have *not* been universally adopted throughout the hospital.

As I have gone into hospitals for seminars or for medical procedures, I am very observant of safety products and compliance with the law in this regard. Unfortunately, I have observed the use of non-safety needles in almost every hospital that I have been in during the last three years. This is not just a localized problem. I have been in scores of hospitals over the last three years and have found that most institutions have a long ways to go to achieve total compliance with the Bloodborne Pathogen Standard.

There are many good reasons to be in compliance. For example, I am sure that many healthcare workers are aware of the following:

- ▶ Each year there are more than 200,000 new hepatitis C infections.
- ▶ There are more than 3.9 million Americans infected with hepatitis C.
- ▶ More than 40% of chronic liver disease is HCV-related and there is no cure for hepatitis C.
- ▶ In the United States alone there are more than 1.25 million people infected with the hepatitis B virus. The infants born to HBV infected mothers are at risk for perinatal infection. There is no cure for hepatitis B.
- ▶ The majority of needlestick injuries can be prevented. The use of safety devices has reduced the number of occupational infections but many institutions are *not* in compliance. OSHA has stepped up fines for violations.

## Needlestick injuries do not need to be “part of the job.”

Compliance with OSHA guidelines is not about keeping obscure laws that nobody cares about. The guidelines are there to protect the health and the lives of healthcare workers and others. Needlestick injuries do not need to be “part of the job.”

Do you remember reading *The Jungle* by Upton Sinclair? I had the opportunity of reading it during a high school English class. Published in 1906, the novel depicts a young immigrant Lithuanian couple, Jurgis and Ona, who are married and left unexpectedly in debt. As they begin working, the family members discover the horrifying working conditions of Packingtown, an area of Chicago immediately south and west of the packinghouses. The conditions of work are inhuman, and the workers are treated atrociously. Jurgis’ father is only able to get a job after bribing a boss in the pickling rooms of a meat-packing plant. The conditions there are terrible, and the job ultimately kills the old man. The conditions in the meat-packing plant were fast-paced, stressful, understaffed, and void of any safety equipment to protect the workers.

The author’s vivid portrayal of the meat-packing industry left a vivid and grotesque impression in the minds of readers. For example, in one passage Sinclair described a room with a drain in the middle where pork bits are washed: “There was a trap in the pipe, where all the scraps of meat and odds and ends of refuse were caught, and every few days it was the old man’s task to clean these out, and shovel their contents into one of the trucks with the rest of the meat.”

This passage, as well as others in the novel, really affected people (to coin a phrase from my teenagers, who also had to read it in high school English classes, “It really grosses you out!”). The depiction of the conditions was so electrifying that readers were called to action: They petitioned the government for reforms. In reaction, the Food and Drug Act was passed a little less than a year after the book’s publication. The book and the public’s activism resulted in safer meat to eat as well as export. Ultimately, the Act instigated an overhaul of the safety conditions in the meatpacking industry because of additional laws that were enacted to protect the meat workers.

Now, I do not believe that the healthcare industry is anything like the environment of the 1900’s meatpacking industry. But there are similarities to some of the job conditions. Needlestick injuries occur because dangerous equipment is used in fast-paced, stressful and often understaffed facilities. Of course, the focal point of clinician’s work has always been on the safety and well being of patients, which is important. However, until the Needlestick Safety and Prevention Act was enacted, there was too little attention given to preventing the injuries and illnesses that healthcare workers develop as a result of taking care of patients.

Many healthcare workers have given up their health and their lives to hepatitis and HIV – all because of accidental needlesticks and other sharps injuries. The stories of the broken lives of healthcare workers that have been the recipients of these needlesticks helped to change the laws in the United States to protect healthcare workers by mandating the use of safety products. I am convinced that compliance with the Bloodborne Pathogen Standard will increase the quality of life and prolong the lives of healthcare workers and others.

One area of particular importance is the use of safety IV catheters. Since almost 90% of patients entering the hospital require some form of intravenous therapy, the use of safety IV catheters can minimize

the number of injuries. So we all should make sure that we are using safety products.

### A Closer Look

So what are the features that clinicians look for as they choose a safety IV catheter? Let's discuss a few of these features. One of the most important features that clinicians need is the ability to determine if the needle is positioned appropriately within a vein. This is usually determined by rapid blood flashback. An easy to view flashback chamber or early flash into the catheter tubing is essential to knowing that the tip of the needle is where it is supposed to be.

Most clinicians indicate that the sharpness of the bevel with needle tip integrity is also very critical to the correct placement of the catheter. In addition, the correct distance between the end of the needle bevel and the tip of the catheter tubing can reduce the amount of force needed to insert the needle/catheter into the vein.

Another important feature is the ability to activate the safety feature of the IV catheter without compromising the safety of the clinician. Hands should always be behind the needle tip in order to maintain clinician safety.

There are a number of safety IV products that perioperative nurses can use as they prepare patients for surgery. The rest of this article will discuss several different products including the following:

- ▶ Introcan® Safety Catheter by B Braun
- ▶ Insyte® Autoguard® shielded IV catheters by BD
- ▶ Acuvance® Safety I.V. Catheter by Medex
- ▶ Protectiv® Safety I.V. Catheter by Medex

There are differences in how each of these three safety catheters are inserted and used. The following descriptions highlight the similarities and differences between these catheters.

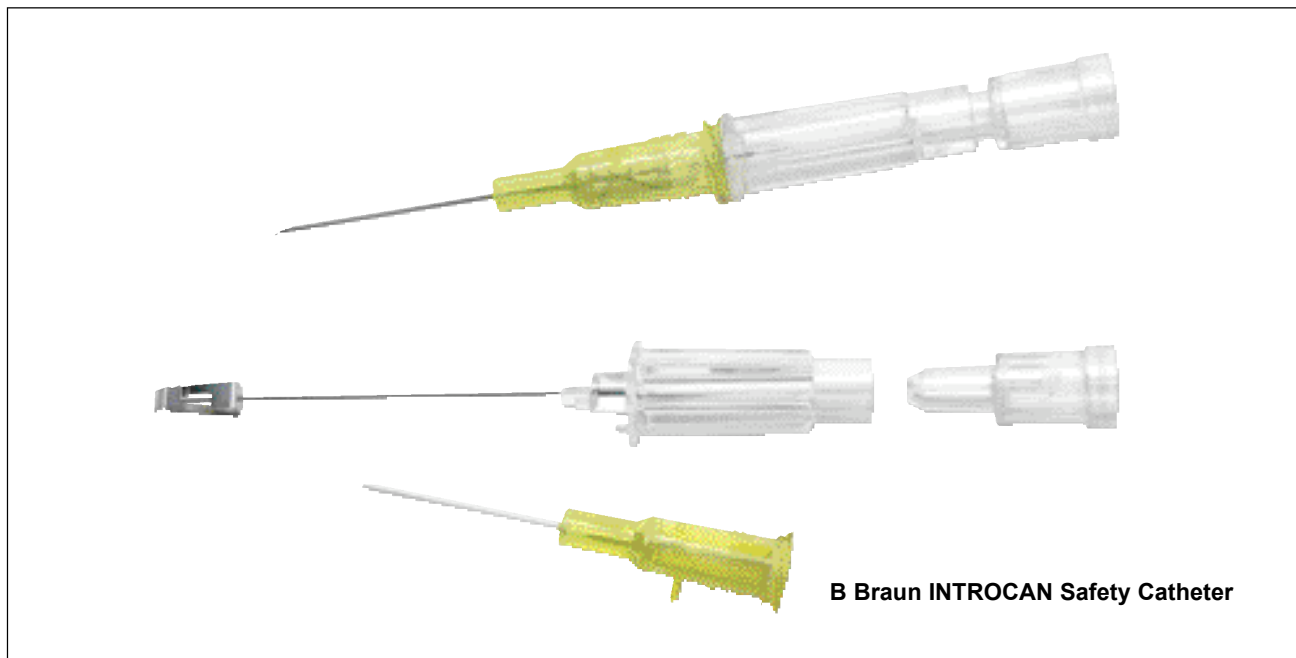
### B Braun INTROCAN Safety Catheter

The INTROCAN Safety IV Catheter incorporates a passive design to minimize needlestick injuries without requiring user activation. The safety clip is pre-assembled in the catheter hub, and is automatically engaged when the needle bevel exits the catheter hub. The safety clip attaches to the needle bevel to minimize inadvertent needlestick injuries.

The unique design of the INTROCAN Safety IV Catheter allows pre-attachment of a syringe to facilitate aspiration and injection during insertion.

After the site has been cleaned the INTROCAN catheter is removed from its packaging. The catheter should *not* be rotated prior to insertion. The clinician confirms that the locking bevel indicator is seated in the "slot" of the catheter hub. The skin is held taut and the angle of insertion is adjusted and the vein is punctured. The blood flashback is observed in the chamber.

The tourniquet is released on the arm and the catheter is lowered until it is parallel to the skin. The needle and catheter is advanced together for 1/8 inch. The catheter is then threaded into the vein. As the needle pulls out of the catheter and the vein, its passive safety clip automatically covers the needle bevel, thus protecting the clinician from an accidental needlestick. The needle is disposed immediately into a sharps container. The infusion line is connected to the catheter hub



and is stabilized and the site is covered according to the facility protocol.

For more information about the INTROCAN Safety IV Catheter visit <http://www.bbrounusa.com/> or call 800-523-9676.

### **BD Insyte Autoguard Shielded IV Catheters**

The BD INSYTE AUTOGUARD Shielded IV Catheters were designed to make insertion easy on the patient and on

the clinician. The catheter features a notched-needle technology that provides immediate visual confirmation of vessel entry along the catheter shaft. This immediate visual confirmation is important to patients that have compromised veins.

To use the BD INSYTE AUTOGUARD Shielded IV Catheters the catheter hub is rotated 360 degrees. The vein is approached at a low angle. Once venipuncture has been established the flashback of blood is observed. As soon as the flashback is visualized the catheter is lowered to almost parallel to the skin. The entire unit is then advanced slightly to ensure that the catheter tip is in the vein.

The catheter is then threaded into the vein while maintaining skin traction.

Digital pressure is then applied beyond the catheter tip and the catheter hub is stabilized. The white button is then pressed and the needle retracts out of the patient's vein and into the barrel. The needle barrel is then disposed of into an appropriate sharps container. The catheter is secured and sterile dressing is applied.

For more information about the BD INSYTE AUTOGUARD Shielded IV Catheter visit <http://www.bd.com/safety/> or call 888-237-2762.

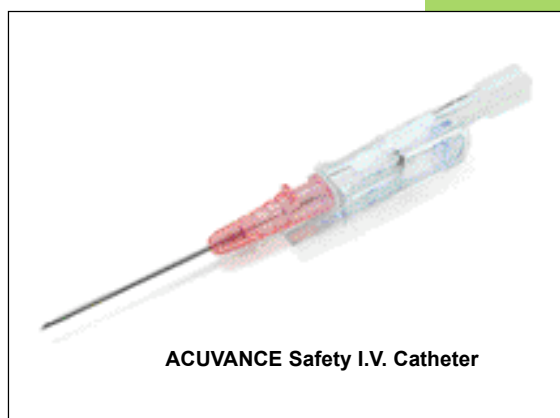


**BD Insyte Autoguard Shielded IV Catheters**

### **ACUVANCE Safety I.V. Catheter by Medex**

The ACUVANCE Safety I.V. Catheter from Medex offers passive safety technology and the comfortable feel of a conventional catheter with a smooth, tapered hub for insertion ease and patient comfort. The unique, large-volume chamber allows clear flashback and easy handling, while the removable flash plug allows syringe attachment for special procedures.

ACUVANCE Safety I.V. Catheter uses passive safety technology to help reduce the incidence of accidental needlesticks. The self-blunting safety technology has been shown to reduce needlestick injury by 76% in phlebotomy.<sup>1</sup> The ACUVANCE Safety I.V. Catheter requires minimal change in technique and no extra



**ACUVANCE Safety I.V. Catheter**

steps: simply insert, thread, remove the introducer, and a blunting mechanism is automatically activated.

To use the ACUVANCE Safety IV Catheter, remove the needle from the packaging and approach the vein at a low angle. (No twisting of the catheter around the needle is required.) Once the venipuncture has been accomplished, the flashback of blood is visualized in the flashback chamber. The needle is then lowered until it is almost parallel to the skin and then advanced into the vein to ensure that the catheter tip is in the vein. The catheter is then threaded into the vein while maintaining skin traction. As the needle is removed from the catheter, a rounded-tip cylinder gradually pushes out from inside the needle to beyond the needle tip. Once it is fully engaged, the needle tip is blunted and non-reusable.

For more information on the ACUVANCE Safety I.V. Catheter, visit <http://www.medex.com/medex/home.aspx> or call 760-602-4423.

### **PROTECTIV Safety I.V. Catheter by Medex**

For more than a decade, PROTECTIV Safety I.V. Catheters have been used by healthcare professionals. PROTECTIV

offers distinct product safety features. It provides a choice of catheter materials. It is compatible with customary technique and provides documented results proven to reduce accidental needlesticks.

The PROTECTIV is easy to use. Like the other catheters described in this article, the Protectiv approaches the vein at a low angle. The clinician is aware that the catheter is in the vein when blood flashes back into the flashback chamber. Lower the angle until the catheter is basically parallel with the skin and advance slightly. The catheter is pushed forward with the push-off tab, which facilitates either one-handed or two-handed threading and keeps both hands behind the needle. Pull the needle back until you hear a “click.” The click, along with visual inspection, helps to ensure that the needle is safety locked within the needle guard. The catheter is then secured using the winged hub.

For more information on the PROTECTIV Safety I.V. Catheter, visit <http://www.medex.com/medex/home.aspx> or call 760-602-4423. †

### **Reference**

1. Evaluation of Safety Devices for Preventing Percutaneous Injuries Among Health Care Workers During Phlebotomy Procedures - Minneapolis - St. Paul, New York City and San Francisco, 1993-1995. MMWR 1997; 46: (2) 21-25



*Ron Stoker, a frequent contributor to Managing Infection Control magazine, is the Executive Director of ISIPS, the International Sharps Injury Prevention Society. He is a frequent speaker on sharps safety and occupational blood exposure at national and international events. Mr. Stoker is in the final stages of gathering information for The Compendium of Sharps Safety Technologies, which highlights information on safety products to reduce needlestick injuries and prevent blood exposure. For more information about ISIPS and sharps safety products, visit [www.isips.org](http://www.isips.org), or email Mr. Stoker at [info@isips.org](mailto:info@isips.org).*