

The Importance of Properly Trained **INFUSION NURSES**

Patients can take a proactive role in their care by understanding the specialized training required for nurses to safely infuse immune globulin therapy.

By Abbie Cornett





INFUSIONS ARE NEVER easy! However, the difference between a positive and negative experience can depend on how well the infusion nurse was trained. And, while patients often assume all infusion nurses have the same training and skills to administer treatment, that is not always the case. Keeping this in mind, patients should take an active role in understanding what training is required to be a qualified infusion nurse and just how critical that training is.

What Is an Infusion Nurse?

During the 1980s in an effort to contain rising healthcare costs, especially those associated with intravenous infusion therapies, the medical community moved treatments out of the hospital setting and into alternative settings. This move was made possible with technological advances in clinical administration, most specifically the development and specialization of the infusion nursing field, which allowed patients to receive safe and effective treatment either at home or in an outpatient infusion center. These alternative settings not only saved money, they improved patients' quality of life.¹

Infusion nurses are registered nurses who specialize in the administration of medications and fluids through an intravenous (IV) line, central line or venous access port. While infusion nurses have many roles, their primary job is to ensure the safety of patients. To fulfill that role, they must be experts in all things that affect patient outcomes. Their knowledge should include but is not limited to infusion needles and catheters, a strong understanding of venous anatomy, an awareness of the physiology of fluid balance and the ability to think critically and respond to emergencies.² Further, infusion nurses must receive appropriate training in choosing the correct site for insertion of the catheter, be able to identify signs of infection or infiltration and watch for indications of blood clots, thrombosis within the vein or an allergic reaction to the medication. Overall, they need to ensure patients' comfort during their infusion therapy, and have the skills to work in a variety of healthcare settings, including home care, acute care and infusion centers.³

Not All Infusions Are the Same

Infusion therapy involves the administration of medication through a needle to treat a variety of conditions that cannot be treated with oral medications. However, all infused medications do not require the same skill set. Treatments can range from the less complex administration of hydration

therapy, to the very complex administration of injectable biologics such as immune globulin (IG).

IG is derived from donated human plasma. Historically, it was first prescribed for patients with primary humoral immune deficiency diseases. Now, it is used to treat a wide array of diseases such as chronic inflammatory demyelinating

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polyneuropathy, peripheral neuropathy, myasthenia gravis, Guillain-Barré syndrome, multiple sclerosis, polymyositis and dermatomyositis, among others. Nurses who infuse IG must receive training in the clinical uses for this lifesaving medication, as well as be familiar with the diseases treated with it. Nurses must also be knowledgeable about potential side effects, the precautions to take to prevent them and how to mitigate them if they occur.

According to Roger Kobayashi, MD, clinical professor at the University of California, Los Angeles School of Medicine and an allergist-immunologist in Omaha, Neb., the importance of having a highly qualified infusion nurse to mitigate some of the inherent problems that can pose risk to patients receiving IG therapy cannot be overstated. Simply being familiar with the infusion of pharmacologics is not adequate experience for these nurses since biologic preparations such as IG are much more complex and they come with unique risks. This is especially true for infusion nurses treating patients in a nonclinical environment such as the home setting. These nurses must have advanced knowledge of possible adverse reactions associated with the medication, and they must be able to immediately spot the early warning signs of adverse reactions. Untrained nurses may not recognize these signs and thus expose patients to significant risk.

Administration of IG

IG can be administered in two ways: intravenously (IVIG) and subcutaneously (SCIG). Unlike IVIG, which is infused into a vein, SCIG is infused by slowly injecting the medicine into fatty tissue just underneath the skin. According to Dr. Kobayashi, infusion nurses must be well-trained in infusing both IVIG and SCIG, and fully knowledgeable about the different dosing requirements of each. They must also understand that no two IG products are the same, and how each product differs in preparation, stabilizers and IgA content.

While most patients tolerate IG replacement therapy well, both IVIG and SCIG can have side effects. With IVIG, up to half of all patients experience at least one adverse side effect such as headache, low-grade fever, aching muscles or joints and rashes. These are especially likely to occur if patients are not receiving IVIG on a regular basis and/or if they are receiving higher doses of IVIG.⁴ In addition, IVIG patients have a greater risk of thrombosis because infusions are administered through vein access. And, while the majority of side effects are usually minor, more serious side effects like anaphylactic shock, aseptic meningitis or blood clots can occur. With SCIG, the severity of side effects is mostly reduced or eliminated since the medicine is absorbed by the body more slowly through fatty tissue, rather than in large doses entered directly into the circulatory system.

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What Is Infusion Therapy?

According to the National Home Infusion Association, infusion therapy involves the administration of medication through a needle or catheter. It is prescribed when a patient's condition is so severe it cannot be treated effectively by oral medications. Typically, infusion therapy means a drug is administered intravenously, but the term also may refer to situations in which drugs are provided through other nonoral routes such as intramuscular injections and epidural routes (into the membranes surrounding the spinal cord).

contribute to adverse reactions are diabetes, renal dysfunction, age (65 and older), coronary artery disease, hypertension, cerebrovascular disease, hyperviscosity disorder (including multiple myeloma, macroglobulinemia and polycythemia), thrombotic events and peripheral vascular disease.⁵

Also prior to infusion, nurses must log the blood product, lot number(s), expiration dates and dosages in each patient's record and a central database. And, they must be knowledgeable and able to communicate effectively to notify doctors, pharmacists and/or others involved in patients' care about real or potential risks for them.

Finally, if patients experience an adverse reaction while receiving an infusion, the details must be documented. And, whenever patients experience an adverse reaction to IVIG, a new consent form must be completed. If patients do not tolerate IVIG therapy, they may benefit from switching to SCIG therapy.

Education Requirements

It's critical patients receiving infusion therapies understand the expertise and specialized training infusion nurses must have. While all nurses learn the basics of infusions and how to start IVs, infusion nurses must acquire additional specialized knowledge through continued education and training.

Below are the basic educational requirements for registered nurses who work as infusion nurses:⁶

- 1) A diploma in nursing (associate's degree, bachelor's degree or master's degree)
- 2) A passing grade on the National Council Licensure Examination
- 3) Work experience as a registered nurse for at least one year
- 4) Exposure in an infusion-related department as a registered nurse (minimum requirement is 1,600 hours or two months total)

In addition to the basic requirements, there is also a premium certification for infusion nursing. The Infusion Nurses Society provides a rigorous and comprehensive exam registered nurses can take to receive a Certified Registered Nurse Infusion (CRNI) certificate. The exam covers the core areas of infusion nursing, which are the principles of practice, access devices and infusion therapies. The CRNI certificate validates the knowledge and skills these nurses have acquired and indicates those nurses are experts in the infusion field.

Diseases Treated with IG

Following is a sample of the many diseases treated with immune globulin therapy:

- Bone marrow transplant recipients
- Chronic inflammatory demyelinating polyneuropathy
- Chronic lymphocytic leukemia
- Guillain-Barré syndrome
- Immune thrombocytopenic purpura
- Kawasaki disease
- Lupus
- Multifocal motor neuropathy
- Myositis
- Neurological diseases such as myasthenia gravis or multiple sclerosis
- Primary immunodeficiency diseases

It should be noted that while there can be a significant difference in the care patients receive from a certified infusion nurse, many nurses without certification have the experience necessary to provide excellent quality care.

Ensuring Care

Clearly vital to the patient experience, infusion nurses must be experts in infusion needles and catheters, critical thinking, responding to emergencies, anticipating what could go wrong and mitigating such issues. Patients deserve nothing less than the safest and best possible care when receiving infusions. As quality of their care directly relates to the education and training of their infusion nurses, it behooves patients to be informed about the proper training required for infusion nurses and to know what to expect from them so all can work together to achieve the best possible patient care. ■

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