

HOME INFUSION THERAPY

M A N A G E M E N T™

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Groups move to ban plastic IV bags

FDA says it will review the issue

All that noise about PVC IV bags was bound to catch someone's attention. Lo and behold, it caught the attention of none other than the Food and Drug Administration (FDA).

An FDA spokeswoman recently told *Home Infusion Therapy Management* the FDA will examine the issue in the near future due to the recent commotion surrounding PVC IV bags and tubing and the potential danger of long-term exposure to DEHP. "We've been monitoring this issue for years," the spokeswoman said. "However, because of the recent questions that are again being raised, we are taking another look at it and doing a risk assessment."

Specific details about the FDA's plans are not available at this time. The National Toxicology Program's Center for the Evaluation of Risks to Human Reproduction plans to assemble a dozen or more scientists to evaluate such substances and their effects on human reproduction and child development. However, it is unclear whether this is part of the FDA's "risk assessment" or if an entirely separate study will be conducted.

The issues

The main combatants in the latest battle over di (2ethylhexyl) phthalate (DEHP) were Chicago-based Baxter Healthcare Corp. and Health Care Without Harm (HCWH), a Falls Church, VA, coalition of 41 hospitals as well as other health, environmental, and social organizations.

According to **Jackie Hunt Christensen**, co-coordinator of HCWH, the issue at hand is to provide patients with the safest health care whenever possible. "This is not an all-or-nothing situation," says Christensen. "Our stance is that providers should avoid [products containing PVC] at all costs whenever possible."

HCWH has not addressed blood bags, for example, because no non-PVC bag is currently available in the United States. However, non-PVC bags and tubing are available for IVs, and these are the bags HCWH hopes health care providers will use in place of the PVC-containing counterparts.

While HCWH says the damaging effects of DEHP — the chemical that leaches from PVC bags and tubing into medication — have been

demonstrated in peer-reviewed studies of premature infants, dialysis patients, and primates; other organizations say there is no such danger to humans. And the group that matters most — the FDA — says there has been no evidence in the past of a danger posed to humans, but that it is willing to reassess its current stance.

“Basically, we’re not aware of any problems for patients from the particular vinyl — the PVC — in these bags. We’re aware that there is some leaching that takes place; we’re pretty convinced that it does not present a problem to patients,” the FDA spokeswoman told *HITM*.

For details on DEHP, go to Baxter’s Web site at www.baxter.com and HCWH’s site at www.noharm.com for studies and press releases detailing both sides of this complicated matter. ■

Getting in on the Remicade rush

New drug brings relief to Crohn’s patients

With the introduction of Malvern, PA-based Centocor’s Remicade (influximab), patients with Crohn’s disease have new hope for putting the disease in remission — with either one or three home infusions of the drug. As patients have begun being treated by the drug, first available last August, favorable outcomes are pouring in.

“One gentleman made the comment that it was the first time in two years he had been able to go out to eat with his wife,” says **Ann Williams**, RN, CRNI, an IV nurse consultant and infusion nurse with Deaconess Home Medical Equipment and Infusion in Evansville, IN.

According to Centocor’s literature on Remicade, the drug is for:

“1. Treatment of moderately to severely active Crohn’s disease for the reduction of the signs and symptoms in patients who have an inadequate response to conventional therapy.

“2. Treatment of patients with fistulizing Crohn’s disease of the reduction in the number of draining enterocutaneous fistula(s).”

According to the drug’s literature, the recommended dose of Remicade is 5mg/kg, given as a single IV infusion for patients who fall under category No. 1 listed above. Patients who fall under category No. 2, with fistulizing Crohn’s disease, receive the initial 5mg/kg dose, followed with

additional 5 mg/kg doses at two and six weeks after the first infusion.

The literature adds that “the safety and efficacy of therapy continued beyond three doses have not been studied.” However, in earlier studies, 82% of patients receiving Remicade experienced “significant improvement.”

While the drug can be first dosed in the home, Centocor notes that only non-PVC bags and tubing should be used.

“It leaches DEHP into the solution; we don’t know what the risk of long-term exposure is,” says **Heidi Brubaker**, RPh, a medical consultant with Centocor. “Remicade is the only drug we have that recommendation for.”

Williams, along with pharmacist Mark Roy, PharmD, established the following policy for the home infusion of Remicade. After creating it, Williams made one minor change to account for the use of non-PVC bags and lines.

“We initially said to use a flow regulator to adjust the rate, but I don’t know that any flow regulators come with non-PVC (lines). We changed the policy to reflect calculating the drip rate,” she says. “We feel with a nurse present throughout the infusion, it is perfectly safe to calculate the drip rate and monitor throughout the infusion.”

Deaconess’ policy:

- **Dosage:**

- Usual dose is 5mg/kg, mixed in 250ml, .9% sodium chloride.

- **Guidelines:**

- First dose may be given in the home.
- Non-PVC tubing and containers.
- 1.2-micron filter.
- Should not infuse any other drug through the same line.
- May be either peripheral or central access.

- **Mixing:**

- Have IV access before preparing Remicade.
- 10 ml sterile water for each vial of Remicade.
- Inject sterile water, direct to side of Remicade vial.
- Foaming not unusual.
- Do not shake.
- Swirl gently or roll in your hands until dissolved.
- Allow to stand five minutes.
- Remove equal volume from bag of .9% NaCl as you will replace with Remicade.
- Inject all Remicade into bag.
- Gently massage the bag; do not shake.
- Label bag with patient’s name, drug, dose, date, time of prep, and initial it.

- **Administration:**

- Infuse over no less than two hours.
- 250ml/2 hours is 8 gtts/15 seconds.
- Count drips.
- Check pulse and BP q30min.
- Observe patient 30-60 minutes following infusion.

- **Side effects:**

- Monitor patient for hypersensitivity reaction.
- Discontinue for severe reactions.
- Fever, chills, pruritus, urticaria, chest pain, hypo/hypertension, dyspnea, and headache.
- Some cases treated with acetaminophen, antihistamines, corticosteroids, and/or epi.
- Rapid resolution following d/c.
- Inform patient/caregiver that patient may

have increased risk of infection.

Williams points out that insurance companies are reimbursing the drug's cost, although the first patient Deaconess was to treat with Remicade was turned down by insurance. She is uncertain as to why the patient was turned down; there could be numerous reasons. But for many patients, Remicade is the answer to their problems.

"From what I have heard, Remicade puts them in remission; but it is only used as a last resort when none of the other conventional therapies worked," says Williams.

She adds that Centocor petitioned to FDA in January for approval to use Remicade on patients with rheumatoid arthritis. ■

Hit the greens for a win-win event

Benefit golf tournament brings name recognition

How would you like to meet with current and potential referral sources for an entire day, show them a good time, raise money for a charity, and provide name recognition most providers only dream about? That's just what Greensboro, NC-based Advanced Home Care has done each of the past five years with its Charity Golf Classic, with stellar results for everyone involved.

Advanced Home Care is an infusion, HME, home nursing, and respiratory services provider with locations in Greensboro, Winston-Salem, High Point, Charlotte, and Asheville, serving 50 counties throughout North Carolina.

When **Michael Fultz**, community education representative for Advanced, was looking for a better way to target referral sources, putting on a golf tournament seemed an obvious choice. It allows him to see numerous referral and potential referral sources in one day, all in a non-intimidating environment.

The inaugural event was called the Physician's Golf Classic and held in Greensboro five years ago.

"We invited as many physicians as we could to a day's event, charged them a small entry fee, and tried to raise money for a charity that is associated with one of the cities we are in," he says.

Fultz has learned quite a bit about putting on a quality golf tournament that allows referral sources, charity, and Advanced Home Care to benefit. He says there are several keys to getting

the biggest return on your dollar.

1. Don't cut corners.

The tournament is a reflection of your business. Scrimp and save and you're likely to send the message that you do the same when it comes to providing patient care.

"It costs Advanced Home Care an average of \$15,000 to \$16,000 to put on a good tournament," says Fultz.

But Fultz gets a big bang for the buck. Once the golfers have registered, lunch awaits them in their golf cart, along with a bag of donated items and a high-quality golf shirt with Advanced Home Care logo on it.

Fultz also provides free golf balls for participants to practice on the driving range for the day's prizes. Eight prizes for the top teams are up for grabs, ranging from \$125 to \$75 gift certificates, all for the golf course clubhouse. There are also \$50 gift certificates for various awards such as longest drive, closest to the pin, and closest to the pin on second shot.

After the tournament, there is a raffle for which all golfers are automatically registered for items such as cell phones, weekend getaways at local motels, golf equipment, or gift certificates to restaurants.

To top it all off, Fultz also offers a new Mercedes for a hole-in-one, as well as a \$10,000 putt-for-cash competition for a 60-foot putt. But Fultz doesn't put up the Mercedes or cash.

"You buy insurance for the Mercedes and certain other things," says Fultz. "It's all actuarial, but we buy the insurance and sponsor the car and putt for cash prizes."

2. Do it for the right reason.

Make sure you put the charity first. Fultz chose to raise money for indigent medical clinics, which are often associated with local hospitals.

"We charge an entry fee, but that check is actually written to the charity, and all the money related to the tournament is donated to the charity," he says. "My personal reason for getting into it is to give something back to the community. If you go that route, you will be more successful than saying you want to do this for marketing or to generate referrals."

Fultz says that referrals will come, but that's not the main reason for the tournament.

"I want everybody to have fun and get them in a neutral setting so they do not think it is going to be a high-pressure marketing day, because that is not the intent," he says. "The intent is to raise money for a great cause and indirectly, the name recognition will generate referrals."

The entrance fee for the event is \$110. The tournament raises \$10,000 to \$11,000 each year for a charity.

3. Use your resources.

Spending \$15,000 to \$16,000 for a golf tournament isn't within everyone's budget. However, Fultz has several ways to help defray the cost of the tournament. The first is to find sponsors.

"I sell spots on the sleeves for a co-sponsor of the shirt," says Fultz. "An HMO participated [in] it last year, and they helped defray some of the cost of the shirts."

Fultz says there is one major obstacle in finding sponsors.

"Most of these corporations don't have the funds to just write you a check, although some of them do," he says. "Sunrise Medical writes me a check every year and they choose to do that, but other vendors choose to donate their product to me in lieu of money."

For example, Advanced Home Care uses Sabratek pumps. Rather than giving Advanced Home Care money to become a sponsor, the company donates pump sets to Advanced.

"That is an option that vendors can choose, and with an event like this any help a vendor can give us is appreciated," he says.

Sponsorships begin with a Bronze sponsorship for \$500 and go up to a Corporate sponsor for \$5,000.

In addition to sponsors that help defray the day's costs, Fultz uses Advanced Home Care staff to help with the event. There are two volunteers at each hole for the various competitions, as well as four volunteers who patrol the course in

beverage carts for the participants.

The designated charity also does its fair share of work.

"The charity usually helps gather raffle prizes, find sponsors for lunch, putt for cash, and hole-in-one competition. Because we fund this, I give them responsibilities to help out," says Fultz.

4. Spread the word.

Fultz sends out flyers and invitations for the tournament to potential referral sources in the medical field: physicians, key individuals at hospitals, attorneys, and even dentists. Current referral sources are also invited, and past participants receive a letter at home.

"It gets easier and easier every year to fill the field," says Fultz. "The last two years, I've turned people away; there is nothing worse than having to turn away a surgeon, and I turned away five of them."

Some physicians travel from other cities, up to an hour away, to take part in the tournament.

"We usually limit our players to about 130. We had 132 last year, but I don't want many more than that. I don't want it to be too long of a day for them, because these people have other things to do too," says Fultz.

5. Do low-key marketing.

Putting on a charity event and avoiding hard-sell techniques doesn't mean you should have a day devoid of networking. Fultz makes a concerted effort to ensure Advanced Home Care makes a good account of itself.

"We put some of our company employees in the foursomes," says Fultz. "I have some strategic placement of key Advanced Home Care employees where I would like them to play so they can talk about certain things during the course of the day."

Last year, for example, Advanced's CEO played with three pulmonologists from a physician group that didn't send much business to Advanced.

"I told him that I would like him to talk about our oxygen program, but be very low key," says Fultz. "We're not looking to sign any contracts on that day, so you don't want to start discussing business on the second hole."

Other employees pair with vendors and talk about new technology and similar developments. And when the day is done, Fultz puts the entire day's event in perspective.

"People tell me at the end of the day that it's the best golf tournament they attend," he says. "My marketing spiel is that the quality doesn't end here, it goes into the home care agency as

well and the services we deliver. I segue it into that, and that's where it's very important."

The final touch is a thank-you letter to each participant. ■

New guide addresses needlesticks

Provides cost data and treatment algorithm

With the recent attention being paid to preventing needlestick injuries among health care providers, a resource made available by Arlington, TX-based Johnson & Johnson could come in handy in helping you weigh the benefits and disadvantages of switching to needleless devices and tubing systems.

Guide is small but resourceful

Occupational Exposure to Blood: Clinical Implications and the Financial Impact of Accidental Occupational Exposure to Blood is a 14-page guide providing invaluable information to providers, ranging from various risk factors and charts on at-risk devices, as well as a worksheet on the financial impact of needlestick injuries and a three-page guideline highlighting the management of occupational exposure to blood.

"We found that there was a two-part need when dealing with occupational exposure to blood," says **Sheila Beuerlein**, group product director for IV catheters at Johnson & Johnson. "First, clinicians needed a formalized plan to address treatment following occupational exposure to blood. Our goal for the treatment protocol was to put the CDC [Centers for Disease Control and Prevention] guidelines in a user-friendly algorithm format."

Second was the need of a way to accurately assess the potential cost of needlesticks.

"We found that institutions need to understand the cost of a needlestick injury, should it occur," says Beuerlein. "From our discussion with end-users, we found that assessing cost was virtually impossible due to the numerous factors involved and varying treatment costs. Our goal was to help walk the clinician through all possible costs presenting average costs based on information contained in the open literature."

The cost worksheet allows the clinician to input the cost data appropriate for that institution while providing sample costs for comparison. Beuerlein notes the cost worksheet is critical in showing the full extent of costs involved in treating needlestick injuries, incorporating both direct and indirect costs. (See charts on pp. 66-69 in this issue.)

Complete cost of injuries

According to Beuerlein, direct costs associated with needlestick injuries include chemoprophylaxis agents such as AZT or similar protease inhibitors drugs to prevent HIV seroconversions. While expensive, such costs are easy to assess; it's the indirect costs that can be overlooked.

"Indirect costs are difficult to assess, such as the loss of work due to reporting time, evaluation, and treatment; not to mention costs due to drug side-effects, increased stress, and anxiety," says Beuerlein. "Then, there are other indirect costs which are the most difficult to predict but can be the most costly, such as costs due to injury claims and OSHA fines."

Lack of awareness widespread

Beuerlein notes that approximately one-third of providers use safety catheters, but a lack of awareness of the truly high-risk devices provides a major obstacle when providers consider switching to safety devices.

"The greatest hurdle in switching to safety devices is the lack of awareness of the risk associated with a needlestick injury," she says. "Not all needlesticks are created equal. A needlestick with a hollow-bore, blood-filled needle is much more dangerous than one from a clean hypodermic needle which has not been previously placed in a patient's vein."

A second hurdle, according to Beuerlein, is getting providers to understand that many needlesticks are never reported.

"National studies have shown underreporting rates ranging from 29% to as high as 96%," she says. "These figures show that the problem is likely worse than an institution may realize."

As a result, the key is in educating providers and clinicians in the risks of needlesticks and an understanding of the areas of concern.

[Editor's note: For a copy of the Johnson & Johnson publication, call your local Johnson & Johnson sales rep, or (800) 255-2500.] ■

Excerpts from *Occupational Exposure to Blood*

Prevention of occupational exposure to blood

▲ Needlestick injuries continue to occur despite proper education and training as part of universal precautions, provision of personal protective equipment, and implementation of sharps disposal systems. Research has shown, however, that the risk of needlestick injuries **can** be significantly reduced by replacing conventional sharps with safer devices designed to reduce risk of injury.¹⁵

Financial impact and clinical implications of occupational exposure

▲ The remainder of this guide includes:

- ▲ The **Financial Impact of I.V. Catheter Needlestick Injuries Cost Input Worksheet** to estimate the potential expense of occupational blood exposure from I.V. catheter needlestick injuries.
- ▲ An **algorithm** (summary and complete) providing guidelines for the clinical management of occupational exposure to blood.

We gratefully acknowledge the editorial guidance provided by Gina Pugliese, RN, MS; VP, Health Care Consulting Group; Chicago, IL.

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Financial Impact of IV Catheter Needlestick Injuries Cost Input Worksheet¹

TREATMENT OF HIGHEST RISK OCCUPATIONAL EXPOSURE	EXAMPLE ²	YOUR HOSPITAL ³
INITIAL VISIT COSTS		
Reporting/Treatment:		
Employee Time	\$40 (2 x \$20/hr)	
Employee Health/Infection Control Nurse time	\$15 (0.5 x \$30/hr)	
Workers' Compensation/OSHA Compliance Manager time ⁴	\$40 (1 x \$40/hr)	
Other (eg, ER visit when Employee Health closed)	\$150+	
Postexposure prophylaxis:		
Tetanus toxoid (x1 booster)	\$3	
Hepatitis B vaccine (3 doses)	\$120 (3 x \$40/dose)	
Hepatitis B immune globulin (2 doses)	\$200 (2 x \$100/dose)	
Zidovudine prophylaxis protocol (28 days) ⁵	\$280	
3TC prophylaxis protocol (28 days) ⁶	\$230	
Indinavir prophylaxis protocol (28 days) ⁶	\$360	
Baseline laboratory tests, employee:		
HIV antibody (ELISA)	\$15	
Hepatitis B surface antibody	\$20	
Hepatitis C antibody	\$30	
Toxicity screen (CBC, renal/liver function tests, pregnancy test)	\$35	
Other (eg, Western blot)	\$119	
Laboratory tests, source (if known):		
HIV antibody (rapid)	\$33	
Hepatitis B surface antigen	\$40	
Hepatitis C antibody (plus confirmatory RIBA if positive)	\$30 (+\$75)	
Other (eg, repeat ELISA, Western blot)	\$104	
Employee counseling:		
Employee time	\$30 (1.5 x \$20/hr)	
Employee Health Nurse time	\$45 (1.5 x \$30/hr)	
Other (eg, infectious diseases consultation, family/peer counseling)	\$220+	
SUBTOTAL (INITIAL COSTS)	\$2,234	
FOLLOW-UP COSTS		
Laboratory tests, employee:		
HIV antibody (ELISA) (x3, at 6 weeks, 3 and 6 months)	\$45	
Hepatitis B surface antigen+surface and core antibodies (x1, at 6 months)	\$90	
Hepatitis C antibody (x1, at 6 months)	\$30	
Toxicity screen (x2, at 2 and 4 weeks)	\$70	
Evaluation and counseling:		
Employee time	\$40 (2 hr)	
Employee Health Nurse time	\$60 (2 hr)	
Other (eg, infectious disease counseling, family/peer counseling)	\$200+	
Administrative (if HIV/HBV/HCV positive):		
Liability Insurance Manager time	\$40 (1 hr)	
Health Department Reporting Manager time	\$20 (0.5 hr)	
SUBTOTAL (FOLLOW-UP COSTS)	\$595	
SUBTOTAL (INITIAL AND FOLLOW-UP COSTS)	\$2829	

Financial Impact of IV Catheter Needlestick Injuries Cost Input Worksheet¹

TREATMENT OF HIGHEST RISK OCCUPATIONAL EXPOSURE	EXAMPLE	YOUR HOSPITAL
A. Subtotal—Treatment costs per needlestick (initial and follow-up costs)	\$2,829	
B. Annual No. of I.V. catheter needlesticks^a	12	
C. Total annual \$ impact of treatment <i>(Line A multiplied by line B)</i>	\$33,948	
Estimated cost for a serious injury claim^b:		
Amount of HIV seroconversion claim		
Less amount of insurance coverage	()	
D. Total estimated HIV claim		
AND/OR		AND/OR
Amount of hepatitis or other infectious disease claim		
Less amount of insurance coverage	()	
E. Total estimated other claim		
Other costs to consider^c:		
Amount of increased insurance premium costs next year		
AND/OR		AND/OR
Increased self-insured retention		
Replacement of injured worker		
OSHA fine ^d		
Liability insurance cost increases		
Legal fees		
F. Total other costs		
G. Annual I.V. catheter usage		
H. Current average I.V. catheter unit cost		
I. I.V. catheter safety system unit cost^e		
J. Annual \$ impact, I.V. catheter safety system <i>(Subtract line H from line I; multiply the difference by line G)</i>		
K. Total annual \$ impact of treatment <i>(From line C)</i>		
L. Total (net) \$ impact of conversion to safety system without a serious injury claim <i>(Subtract line K from line J)</i>		
Net unit cost increase (decrease) to safety system without a serious injury claim <i>(Line L divided by line G)</i>		
M. Total estimated annual cost of needlestick injuries with a serious injury claim <i>(Lines C + D + E + F)</i>		
N. Total (net) \$ impact of conversion to safety system with a serious injury claim <i>(Subtract line M from line J)</i>		
Net unit cost increase (decrease) for safety system with a serious injury claim <i>(Line N divided by line G)</i>		

The costs cited in this worksheet were reviewed by Connie Steed, RN, CIC, Nurse Epidemiologist, Greenville Hospital System, Greenville, SC. We gratefully acknowledge her participation.

Cost Worksheet Notes

- 1.** The protocol that your health care organization follows may differ from what is presented here. The worksheet on the previous pages was developed in consultation with infectious diseases specialists, needlestick coordinators, and risk managers; reviewing current literature; and studying CDC and OSHA regulations and guidelines.
- 2.** The EXAMPLE assumes a worst-case scenario, in which the exposure is highest risk and the employee agrees to receive post-exposure prophylaxis. Lower risk exposure and/or employee refusal to receive post-exposure prophylaxis will reduce the financial impact of an exposure.
- 3.** Not all treatment protocols require every step listed. For example, not all needlestick injuries require the administration of ZDV. To calculate the actual needlestick costs, it is suggested that you factor each treatment step listed by the percentage of exposures to which the step may apply in your institution on an annual basis. The cost of treatment, laboratory tests, reporting, and/or counseling may be different at your institution.
- 4.** Hospitals are required to report to OSHA any injury to a health care worker that results in the administration of medical treatment. Medical treatment is defined as the use of prescription medication (beyond a single dose for minor injury or discomfort). Therefore, any needlestick requiring medical treatment, including hepatitis B immune globulin, hepatitis B vaccine, or HIV postexposure prophylaxis, must be reported. [U.S. Department of Labor, Occupational Safety and Health Administration. *Enforcement Procedures for Occupational Exposure to Hepatitis B Virus (HBV) and Human Immunodeficiency Virus (HIV)*. Instruction CPL 2-2-44B.]
- 5.** Cost based on wholesale cost to pharmacist of ZDV 200 mg tid, 3TC 150 mg bid, and indinavir 800 mg tid, all for 28 days. [New drugs for HIV infection. *Med Lett Drugs Ther.* 1996;38:35-37.]
- 6.** Multiply annual number of all needlesticks by 9.6% to estimate the annual number of I.V. catheter needlesticks incurred if this information is not available. [Ford CD. Disposal of sharps: implications and control. *J Intravenous Nurs.* 1990;13:42-47.]
- 7.** There are limits to workers' compensation insurance coverage. Awards in excess of those limits are direct costs. Workers' compensation claims and other agreements of payment by the employer to the employee with occupationally acquired HIV have been reported to be well over \$1 million, and much of this is frequently not covered by insurance. [Hudson T, Eubanks P. Hospitals should prepare for AIDS liability problems. *Hospitals.* May 5, 1990; 64:33-34.]
- 8.** OSHA began issuing citations of alleged willful violations against health care institutions in January 1990. Proposed penalties have exceeded \$100,000. [Getzlaff H. *Wyatt Risk Management Direction.* April 1990.]

Source: Johnson & Johnson, Arlington, TX. Used with permission.

There are benefits to training staff as specialists

How a agency benefited from an advanced IV team

For several years, Visiting Nurse Service of Webster, NY, had a dedicated IV team for its 100-plus nursing staff. But when the team informally fell by the wayside, the result was a reduction in nursing skills as well as increased nursing visits. As a result, Visiting Nurse Service recently re-established its IV team to the benefit of staff and patients alike.

Sharon Billings, RN, senior RN for infusion therapy for Visiting Nurse Service, says there were two reasons for getting the advanced IV team up and running again.

“Previously, any referral that had infusion therapy automatically went to a member of the IV team to case manage,” she says. “When the team disbanded, a referral for infusion therapy didn’t necessarily go to a member of the infusion therapy team.”

The result was that all nurses were expected to handle standard infusions; but if an advanced skill was needed (such as epidurals or urokinase), a member of the original IV team would co-visit or take over the patient even though the team was no longer in existence.

“The advanced IV nurses were not getting the IV patients like they used to, so there was a diluting of skills,” says Billings. “Instead of doing peripherals on a weekly basis, they were only doing them a couple of times a year.”

While nurses who were adept and enjoyed infusion therapy were receiving fewer infusion patients, the opposite was happening at the other end of the spectrum.

“We also found that many nurses were not comfortable with infusions, yet they had to case manage this population. It increased our need for co-visits with these patients,” says Billings. “The quality is not what it used to be, so it was

determined that in the best interest of quality and our patients, we needed to return to our IV teams.”

The first step in establishing an advanced IV team was to develop an advanced infusion therapy class. Over the course of a month, Billings worked with another original member of the advanced IV team and an advanced practice nurse to decide what basic IV skills should be required of all nurses and what advanced IV skills should be addressed in the advanced class, which was to consist of a four-hour lecture and a four-hour skills lab.

“There is no way to teach all the various aspects of infusion therapy in eight hours, so we started by determining what our patient population consisted of and looked to address all the skills we needed to have for those patients,” Billings explains.

She notes that advanced IV skills necessary for her staff included peripheral catheters, IVADs, epidurals, and the urokinasing. Billings used the original IV team’s class as a guide, then conducted research using journal articles to update the information.

Getting (re)started

Because all Visiting Nurse Services staff must pass a basic infusion class included in the orientation program, the advanced class was simply building on the skills presented in the orientation. The basic class included dressing changes, hanging infusions, and flushing central lines. Separated from that and addressed in the advanced class were skills such as peripheral lines, pumps, IVADs, epidurals, and urokinase installation.

Next was to select the nurses who would form the IV team.

“One of the important considerations was finding nurses who were interested. Because, unless we get a nurse who is committed and has an interest in infusion therapy, we weren’t going to have a nurse who would take it upon herself to continue her learning,” says Billings. “To be on

COMING IN FUTURE MONTHS

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■ Why CRNI? Outcomes of CRNI nurses

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■ Pied Piper: Other states follow California’s safety mandate

the advanced IV team, first and foremost they had to express an interest and desire to do it. Then, they needed to go through the advanced program and follow through with co-visits for any new skills.”

The advanced program consists of a formal, eight-hour class broken down into a four-hour lecture and a four-hour skills lab.

For the skills lab, Visiting Nurse Service invited area vendors to attend so nurses could get hands-on experience with equipment used by the various vendors and ask questions. The lab also includes an opportunity for nurses to cannulate a vein on each other, a lab that showed urokinase installation and repairing a PICC line.

Billings notes that advanced nurses don't repair PICC lines, a job that is left for a core group of the advanced IV team.

“There are just nine members of the core group. It is the group that does the more advanced troubleshooting of pumps, and more specifically, they are the ones that are trained at removing and repairing PICC lines,” says Billings. Three members of the team have received certification to insert PICC lines through training at a local hospital.

The lecture portion of the class addresses:

- **An overview of the different types of lines.**
- **Policy and procedures (addressed in the basic class as well).**
- **Peripheral lines.**

“Each of the above sections includes indications for use, skilled techniques, patient education, nursing implications, documentation requirements, copies of skills checklists for all the different procedures, subcutaneous pumps, IVADs, infusion therapy pumps, and controllers, epidurals, urokinase and legal implications,” Billings explains.

“It also includes a piece on anatomy and physiology of the different veins in the arms; and for all the different sections, we found journal articles that would be interesting, and included them as well.”

Now that the advanced IV team is back up and running, combined with the basic IV skills required of all nurses, Billings says the staff and patients have the best of both worlds.

“When we have an infusion patient, that patient goes to a member of the IV team,” says Billings. “The benefit is that the accountability for the patient remains with a member of an IV team. But if that nurse is overwhelmed that day, she can use a member of the basic nursing staff to do a revisit because they are able to use basic IV nurses for some visits.”

This is in sharp contrast to what happened

when all nurses were receiving IV patients. For example, if a patient had a PICC line and a member of the basic nursing team made a visit and the line was occluded, a second nurse with advanced IV skills was called to come out and assist the original nurse.

“Now there is one nurse who is accountable,” says Billings, “and each IV patient is being primarily by a member of the infusion therapy team. Yet, if that team member is unable to see the patient on any given day for any reason, they can at least float it to a nurse with basic skills.”

Billings says there are 35 nurses on the advanced team who case manage, but a total of 50 nurses on the team in order to allow for 24-hours-a-day, seven-days-a-week coverage.

In the nine months the team has been back

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Editorial Questions

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in place, Billings says she has already seen a difference. “We haven’t collected data, but I see an increase in staff satisfaction, and I am not doing near as many co-visits,” she says. ■

Provider compiles top 10 IV tips and tricks

What do you do when your nurses are properly trained, but you still want to improve their IV skills? You look to find any way to add to the existing knowledge.

By looking to gain that edge, **Katharina Loock, RN**, of the Wadley Regional Medical Center’s department of education, in Texarkana, TX, was able to compile a list of the top 10 IV tips and tricks.

“Our patients expressed that they were not that happy with our IV skills,” says Loock. “We realized it was more perception than anything else, but the nurses started looking at how that could be changed. The nurses wanted to improve their own skills.”

Loock started by consulting with nearly a dozen IV professionals in her area. Then she approached nursing groups and posed the same question, asking for any types of tips. “I received about 50 answers from a very varied group,” she says. “There were IV nurses, nurse anesthetists, ICU nurses and nurse educators.”

In the end, Loock says there are no secrets to providing quality care. While there are some tricks of the trade, proper training as the bottom line seems to prevail. “It all came down to the same things,” she explains. “There really aren’t that many tricks. It comes down to having really good technique and really good anatomical knowledge.”

Here’s the list Loock compiled from other professionals:

10. For well-filled but fragile veins, try puncturing without using a tourniquet.
9. For low blood pressure, use a BP cuff, not a tourniquet.
8. For no veins, some people swear by double tourniquets. Use one high on the arm and a second four inches above the puncture site.
7. For bad filling, some people swear by “milking the vein” — gently stroking from distal to proximal.
6. For no veins, apply warm towels for several minutes.

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5. For no veins, let the arm hang down for awhile, then use the “praying position” for venipuncture.

4. Apply a tourniquet six to eight inches above the selected puncture site.

3. Think purpose, appropriate access, appropriate catheter size, and appropriate site.

2. Take your time performing the venipuncture.

1. Take your time when choosing the right vein. ■

CE objectives

After reading the June issue of *Home Infusion Therapy Management*, CE participants will be able to:

1. Identify patients who qualify to receive Remicade.
2. List four indirect costs of needlestick injuries.
3. Identify the leading benefit of having infusion-trained nurses.
4. List the top two “tips” in increasing IV proficiency. ■