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INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY™

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Introducing the be of catheter-rela

ARROWg+ard™*. The first and only blue line of centr

Complications due to catheter-related bacteremia are medically unacceptable when the causes are preventable. And in today's health-care climate, the monetary cost of treating nosocomial infection versus the cost of prevention is similarly unacceptable.

Fortunately, the forces of prevention have gained a new weapon, ARROWg+ard™ is a patented colonization-resistant chlorhexidine and silversulfadiazine antiseptic surface molecularly bonded into the polyurethane catheter material along the entire indwelling length of each ARROWg+ard™ blue line CVC.

A recent study indicates that catheters with ARROWg+ard™ protection were twofold less likely to be colonized than control catheters *and fourfold less likely to produce bacteremia*. The study also noted a considerable lengthening of the safe indwelling period for ARROWg+ard™ catheters compared to control catheters.[1]

ARROWg+ard™ infection protection is presently available in select multi-lumen** and single-lumen CVC kits. It will soon be available on other Arrow critical-care products.

The benefits of CVCs are not without risk

There is no question that central venous catheterization (CVC) represents a significant medical advancement, particularly in treatment of the critically ill. However, with increased usage there is an increased risk of CVC-related infection.

The reported frequency of intravascular device-associated bacteremia is between 0.2% and 0.5% for IV peripheral catheters, up to 7.0% for central parenteral nutrition catheters-and *from 3.8% to 12.0% for central venous catheters.*[2] In short, 80% to 90% of each year's cases of intravascular-related bloodstream infection arise from the use of CVCs.[3] Moreover, a 10% to 20% case Fatality rate has been associated with catheter-related bacteremia.[3]

In an address to the Third International Conference on Nosocomial Infections,[4] Dr. Dennis Maki stated that *one-third of nosocomial infections are preventable,* especially the 50,000 cases a year that develop from CVCs. Some 80% of these catheter-related infections arise from bacteria found on the skin that migrate down the catheter track, Dr. Maki noted.

Awareness is, of course, part of the battle. But more ammunition is needed. And that's why we developed ARROWg+ard™.

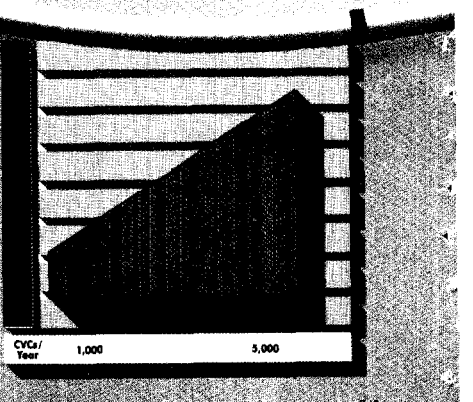
More infection control means more financial control

In a study published in 1988 reporting 1986 results, Hampton and Sheretz determined that nosocomial infection added a mean of seven days to a normal hospital stay and *increased the cost by a mean of more* than $6,000.[5] An additional downside: Medicare reimburses very little of the cost if a hospital stay is extended to treat bacteremia.

When you add the increases in cost since these studies were made, the economic impact of CVC-related infection is even more severe. And while new drugs to fight septic infections offer hope of better management in some crisis cases, the extreme costs pose a clinical dilemma for caregivers.

But ARROWg+ard™ can help reverse those spiraling figures.

Let's say that a hospital places 500 multi-lumen CVCs a year, If the infection rate is 4%, 20 infections result. By



*4% Infection Rate and $6,000 Mean Cost.[3,5]

bringing the infection rate down to 2%,

Raad and Bodey, Am J Infect Control, 20(3): 95, 1992. Maki, DG, Weise, E, Sarafin, SJ. A semiquantitative culture method for identifying intravenous-catheter-related infection. N Engl J Med, 296(23): 1305-1309, 1977. Maki, DG. Nosocomial bloodstream infections: Using devices and fluids. Am J Med, 85(suppl 5A): 119-129, 1988. Maki, DG. Control of catheter-related infections. Ann Surg, 215(2): 110-123, 1992. Hampton, AA, Sheretz, RJ. Vascular-access infections in hospitalized patients. Rev Infect Dis, 10(3): 505-520, 1988.

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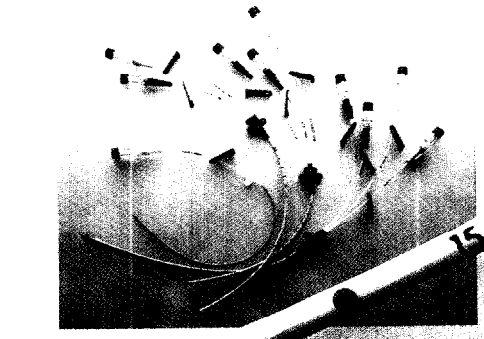
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venous catheters with built-in infection protection.

10 cases would be avoided-and, at the figure of $6,000 per case for added hospitalization, the added cost for infection would be cut in half, from $120,000 to $60,000. At a cost of $57.75 per ARROWg'ard™ multi-lumen CVC kit, or $28,875 for 500 multi-lumen CVCs, you can see that the hospital saves $31,125.

You retain over half the savings



even after subtracting the catheter cost. Even more important than the economics, potentially, lives may be saved.[3] Further, you must consider the unnecessary expenditure of time and energy on the part of your staff and the trauma and suffering of the patient.

Additional patient and physician benefits.

Select Arrow multi-lumen and single-lumen central venous catheters now carry ARROWg'ard™ protection. And there are other impressive benefits built into select ARROWg'ard™ CVC kits and sets. These features add up to better patient care with every use:

- The Arrow Blue FlexTip* is an integral catheter tip which is more pliant than the body. It remains patent yet deflects in case of inadvertent contact with the vessel walls to reduce perforation risk.
- Flexible thromoboresistant polyurethane material softens in situ for excellent indwelling characteristics.
- The Arrow® Raulerson Introducer Syringe*** has a hollow plunger/barrel containing a patented valving system. It allows a spring-wire guide to be placed directly into the vessel lumen so there's less trauma, less contamination risk, and virtually no chance for air embolism.
- The Arrow Advancer" saves you time by helping you to easily straighten the "J"-tip spring-wire guide and insert it with one hand, advancing it to the proper position with your thumb.
- A centimeter-marked spring-wire guide (.025" and .035" diameters available) aids in accurate and positive catheter placement.

Not only does Arrow offer more benefits, but you have a wider choice of kits, sets, and accessories for central venous catheterization from Arrow than from any other source.

Ask for our free infection-control **information**packet

We have prepared a helpful packet on infection control. It contains many of the articles referenced in this brochure and CVC informational literature. For your free packet, call your Arrow representative, or contact us directly by calling 1 800 233-3187, Ext. 3294, and ask for Joanne.

Refer to package insert for current warnings, precautions, and instructions for use.

*ARROWgard™ is a joint development of Daltex Medical Sciences, Inc., and Arrow International, Inc., using technology developed by Dr. Shanta Modak and her colleagues, in the Department of Surgery, Columbia University. U.S. Patent Numbers 4,612,337, 4,563,485, 4,581,028, 5,019,096 apply. Other U.S. and foreign patents pending.

**U.S. Patent Number RE-31873. Canadian Patent Number 1,112,533. Foreign patents pending and issued. The Arrow-Howes™ Multi-Lumen Central Venous Catheter is a joint development of Randolph Howes, M.D., Ph.D., and Arrow International, Inc.

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Due to product availability, catheters initially may be manufactured in a color other than blue.

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**Occupational Safety & Health Administration (OSHA) Instruction PUB 8-1.1 "Work Practice Guidelines for Personnel Dealing with Cytotoxic (Antineoplastic) Drugs" January 29, 1986

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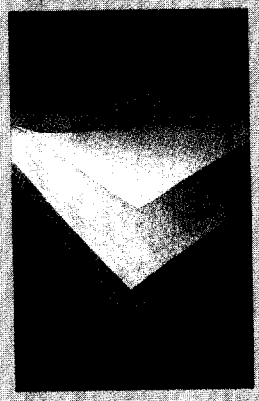
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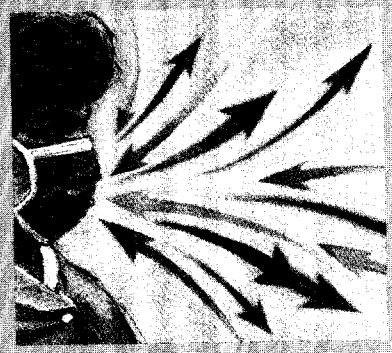
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