

Patient Safety Alert

Veterans Health Administration Warning System Published by VA Central Office

AL06-012

April 6, 2006

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- Item:** **Mix-up (wrong route of administration) of bladder irrigation with intravenous (IV) infusions**
- Specific Incidents:** Since 2001, VA facilities have reported five cases of accidental infusion into an IV line or PICC line. Amphotericin B (*Attachment #1*) was given intravenously when it was intended for irrigation of the bladder via a catheter. The same adverse event could occur with Glycine. Amphotericin B and Glycine are both contraindicated in patients with kidney or liver disease and when Amphotericin B is infused via IV line, it can induce serious complications (e.g., kidney failure).
- General Information:** Amphotericin B mixed with “Sterile Water for Injection” is infused into a patient's bladder to treat fungal infections (candiduria). The route of administration for this process is also known as bladder irrigation or intravesical instillation. Presently, when continuous bladder irrigation is prescribed, the pharmacy service provides intravenous (IV) bags to the unit, and nursing uses standard IV tubing, an IV pump, and a special connector into a 3-way bladder (Foley) catheter (*Attachment #2, Diagram A*) to administer the medication. Other bladder irrigations, such as Glycine 1.5%, can also be mixed in IV-like bags, and used with IV tubing and adapters. Use of IV bags and tubing creates a hazardous situation that can result in an accidental IV infusion instead of the intended bladder irrigation. While hard plastic containers (instead of IV bags) and bladder catheter-specific tubing (larger diameter than IV), are available, their use has not been uniformly employed or utilized.
- Another misconnection risk factor stems from supporting software packages (i.e. BCMA, Pharmacy) that necessitate that bladder irrigation medication order be entered into the software as if it were an IV medication. Attempting to resolve this confusion, pharmacies often add warning labels onto the infusion fluid bags – for example, “NOT FOR I.V. INFUSION” which is of limited value to avoid misconnections since the label could be overlooked or become separated from the infusion bag.
- Actions:** 1) By April 11, 2006, notify clinicians who prescribe, formulate, or administer bladder irrigations of this alert. This will, at a minimum, include oncology and urology nurses and physicians, pharmacists, and compounding technicians.

- 2) By May 5, 2006, develop a plan and implement the following steps:
 - a) Discontinue the use of IV bags and tubing when the route of administration is for bladder irrigation.
 - b) Purchase and use hard plastic fluid containers and tubing sets specific for bladder irrigation use (see *Attachment #3* for examples).
 - c) If the above advice cannot be followed with some medications (e.g., BCG Vaccine) that are administered intravesically, pharmacy must fully assemble, package, and vividly label a kit with container, tubing, and bladder catheter adapter.

Additional Information: 1) During the background work for this Alert, NCPS found that there is no clinical indication for continuous bladder irrigation with Amphotericin B; as well as no conclusive study of the clinical effectiveness of Amphotericin B irrigation, in general. For example refer to:

Drew RH, Arthur RR, Perfect JR. Is it time to abandon the use of amphotericin B bladder irrigation? *Clin Infect Dis.* 2005 May 15;40(10):1465-70.

Kauffman CA. Candiduria. *Clin Infect Dis.* 2005 Sep 15;41 Suppl 6:S371-6.

- 2) VHA Office of Information and NCPS will work with developers and work groups so that these systems will track and label bladder irrigation fluids as such.

Source: VISN 10 and SPOT Root Cause Analysis database.

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Attachments:

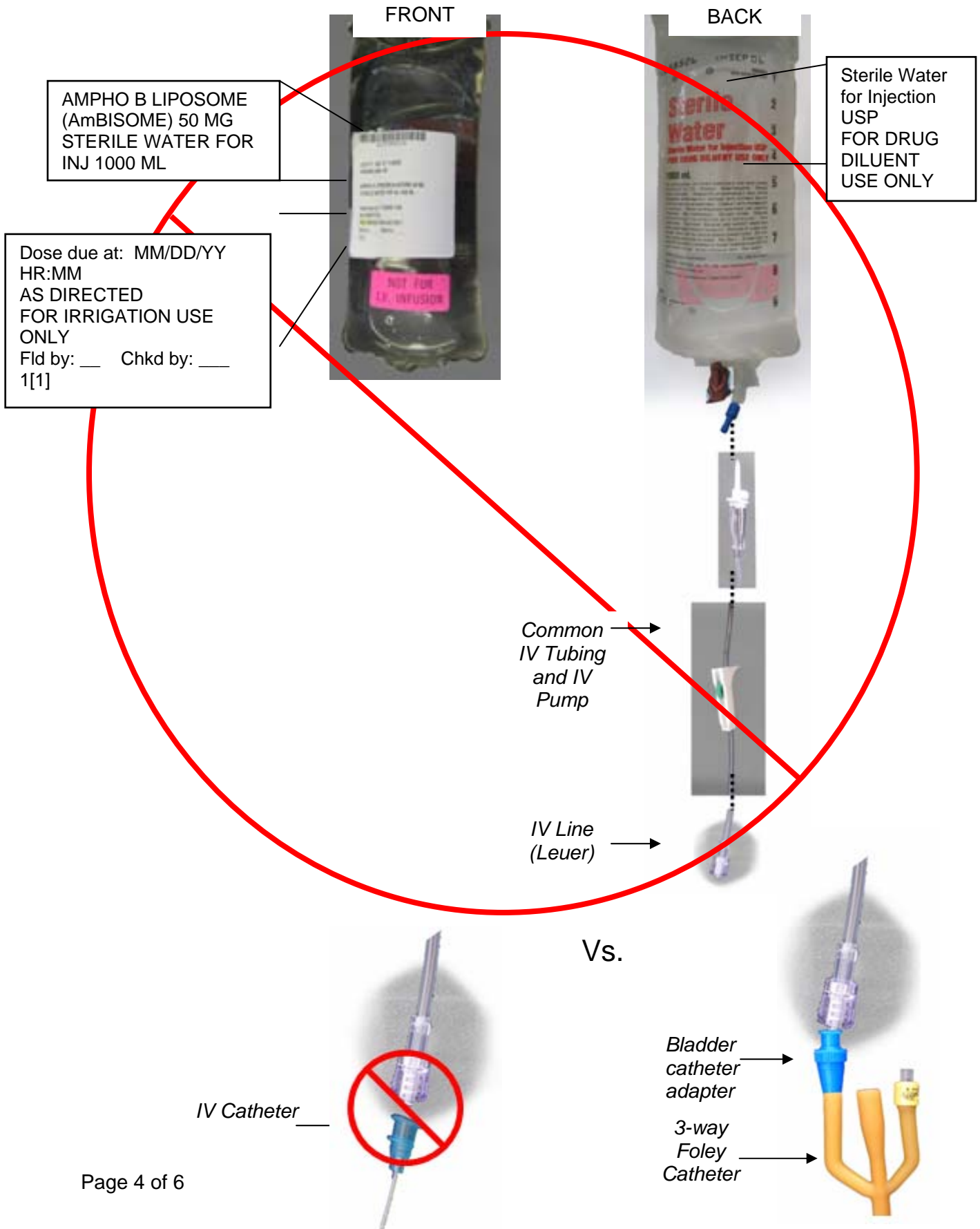
- 1) RCA database summary of events
- 2) Diagrams of irrigation set-ups:
 - A) using I.V. bag and tubing
 - B) as recommended using hard plastic container and urinary catheter
- 3) Example list of bladder irrigation sets.

Attachment #1
RCA database summary of events

Type	Intended Route	Actual Route	Medication	Contributing Factors	Discovered by...
RCA	Bladder	IV	Amphotericin B in Sterile Water	Not Available	Oncoming RN noticed during patient check
RCA	Bladder	PICC	Amphotericin B in Sterile Water	Not Available	Unknown
Safety Rpt	Bladder	IV	Normal Saline	Understood via CPRS as 200 ml/hr as "IV" infusion	Oncoming RN noticed during patient check
RCA	Bladder	IV	Silver Nitrate	Bag missing its "Irrigation Only" sticker; route of administration info in BCMA unclear	"Finicky" IV pump alarm caused first nurse to have another nurse check
RCA	Bladder	IV	Amphotericin B in Sterile Water	Not Available	Oncoming RN noticed during patient check

Attachment #2, Diagram A

Configuration to be AVOIDED for Amphotericin B in Sterile Water for Injection "IV-type bag to be delivered as continuous bladder irrigation; with misconnection demonstrated



Attachment #2, Diagram B
Recommended configuration for bladder irrigation



Attachment #3

Example of systems specific to bladder irrigation, and not compatible with IV catheters

- 1) **Baxter:** UROMATIC plastic containers, such as "Sterile Water for Irrigation" 1000 milliliter (mL) and 1.5 % Glycine Irrigation 3000 mL and 5000 mL. 2 ports on the bags, one being an additive port and one for accepting the spike on the irrigation set. The tubing on uromatic containers irrigation sets is larger (internal diameter (ID) 0.118 to 0.280) than IV tubing (ID of 0.102)
- 2) **B. Braun:** Sterile for Irrigation in Hard Plastic bottles from sizes ranging from 500 to 4000 mL; accompanied by Irrigation/Urology Sets with a "Christmas Tree" shaped ending that will fit directly to the Foley Catheter (no adaptor needed); Product Code V4508.
- 3) **Hospira:** Sterile Water for Irrigation USP with hanger, 1000mL; 12s NDC 0074-7139-09; Cytoscopy/Irrigation Set – for constant or intermittent bladder irrigation (needs adaptor) 6544-02 35 mm Screw Cap Adaptor - (for use with pour bottle system to be vented); 20s. 17024-05