



**North Carolina Department of Health and Human Services
Division of Public Health • Epidemiology Section
Communicable Disease Branch**

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State Health Director

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To: All North Carolina Health Care Providers
From: Megan Davies, MD, State Epidemiologist
Re: **INFECTIONS FROM MISUSE OF SINGLE-DOSE / SINGLE-USE VIALS**

This memo serves as a warning to clinicians regarding the risk of infections when single-dose/single-use vials (SDVs) of medication are used for multiple patients.

Concerns over drug shortages or medical costs may tempt health care professionals to use SDV medications for more than one patient. However, inappropriate use of SDVs can lead to transmission of life-threatening bloodborne pathogens and bacterial infections.

Since 2007, at least 20 outbreaks have been associated with use of SDV medications for multiple patients. The CDC recently reported on two of these outbreaks (summarized below). Ten patients in Arizona and Delaware contracted either methicillin-resistant *Staphylococcus aureus* (MRSA) or methicillin-susceptible *S. aureus* (MSSA) as a result of SDV misuse.

Clinic Type	Suspected Breaches	Outcomes
Pain Clinic (AZ)	<ul style="list-style-type: none"> Prepared 'morning' and 'afternoon' contrast solution from SDVs at start of day for multiple patients Failed to wear facemasks during spinal injections 	<ul style="list-style-type: none"> Three MRSA infections among patients receiving 'afternoon' solution All patients hospitalized, ranging from 4-41 days One additional patient found deceased in home; invasive MRSA could not be ruled out
Orthopedic Clinic (DE)	<ul style="list-style-type: none"> SDV accessed over the course of several hours for multiple patients until all contents were withdrawn 	<ul style="list-style-type: none"> Seven methicillin-susceptible <i>S. aureus</i> infections All patients required debridement of infected sites and antimicrobial therapy Average length of hospitalization was 6 days

Invasive *Staphylococcus aureus* Infections Associated with Pain Injections and Reuse of Single-Dose Vials, Arizona and Delaware, 2012; Morbidity & Mortality Weekly Report. 2012;61(27):501-504

These recent outbreaks illustrate the serious consequences of SDV misuse. Because SDVs are typically preservative-free, frequent access can lead to bacterial contamination. In addition, accessing an SDV multiple times increases the risk of patient-to-patient transmission of bloodborne pathogens such as HIV, hepatitis B, and hepatitis C.

The NC Division of Public Health asks that you regularly review safe medication injection practices and ensure that your staff is practicing injections in accordance with current infection control recommendations. Key points from the 2007 Healthcare Infection Control Practices Advisory Committee recommendations are listed below. Additional information is available at www.cdc.gov/injectionsafety.



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Location: 225 N. McDowell Street • Raleigh, N.C. 27603

For the protection of your patients, your staff, and your practice, always follow these guidelines:

Do not administer medications from single-dose vials or ampules to multiple patients or combine leftover contents for later use.

In times of critical need, contents from unopened single-dose/single-use vials can be repackaged for multiple patients. However, this should only be performed by qualified healthcare personnel in accordance with standards in United States Pharmacopeia General Chapter <797> Pharmaceutical Compounding — Sterile Preparations. Following the USP standards is imperative, as medication contamination and patient harm can occur when repackaging (e.g. splitting doses) is not done properly.

Use aseptic technique to avoid contamination of sterile injection equipment

Do not administer medications from a syringe to multiple patients, even if the needle or cannula on the syringe is changed. Needles, cannulae and syringes are sterile, single-use items; they should not be reused for another patient nor to access a medication or solution that might be used for a subsequent patient

Use fluid infusion and administration sets (i.e., intravenous bags, tubing and connectors) for one patient only and dispose appropriately after use. Consider a syringe or needle/cannula contaminated once it has been used to enter or connect to a patient's intravenous infusion bag or administration set

Use single-dose vials for parenteral medications whenever possible

If multidose vials must be used, both the needle or cannula and syringe used to access the multidose vial must be sterile

Do not keep multidose vials in the immediate patient treatment area and store in accordance with the manufacturer's recommendations; discard if sterility is compromised or questionable

Do not use bags or bottles of intravenous solution as a common source of supply for multiple patients

Wear a surgical mask when placing a catheter or injecting material into the spinal canal or subdural space (i.e., during myelograms, lumbar puncture and spinal or epidural anesthesia)

*Safe Injection Practices to Prevent the Transmission of Infections to Patients
(http://www.cdc.gov/injectionsafety/IP07_standardPrecaution.html)*

Injection Safety is Every Provider's Responsibility

www.oneandonlycampaign.org