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CROSS CONTAMINATION WITH INSULIN PENS

From the March 27, 2008 issue

Facilities using insulin pens should bear in mind the possibility that an individual patient's pen might be used for another patient. In one report, a nurse told us that, rather than wait for an individual patient's pen to come from pharmacy, nurses at her hospital often borrowed a pen from another patient, put on a new disposable needle, and injected a dose of medication into the second patient using the first patient's pen. Apparently, the nurses failed to recognize that it's possible for biological contamination of the insulin solution to happen even if aspiration does not occur prior to injection. It is unclear whether these nurses felt pressured to engage in such an at-risk behavior because of system problems, such as lengthy turn-around time for delivery of new pen devices. Several studies suggest just how risky sharing pens among patients might be. Hemoglobin was detected in 6 out of 146 cartridges (4.1%) used by diabetic patients in one study (Sonoki K, et al. Regurgitation of blood into insulin cartridges in the pen-like injectors. *Diabetes Care*2001; 24:603-04, available at: <http://care.diabetesjournals.org/cgi/content/full/24/3/603>).

In another study of 120 patients, non-inert material, including squamous cells and other epithelial cells, was found in 58% of the cartridges (Le Floch JP, et al. Biological material in needles and cartridges after insulin injection with a pen in diabetic patients. *Diabetes Care*1998; 21:1502-04, available at: <http://care.diabetesjournals.org/cgi/reprint/21/9/1502.pdf>). The authors noted that air bubbles could enter the cartridges after injection unless the needle is removed, suggesting that biological materials could do the same while the needle is in place. Pen manufacturers caution users to remove the needle immediately after injection so as not to leave a channel for entry of air into the cartridge, and they also warn against sharing the device between patients. Obviously, this is something that requires ongoing education and oversight wherever insulin pens are used. Sharing of pens must be prohibited. While we are not aware of any cases of actual cross contamination, the risk remains. Many hospitals have employed pen technology successfully and safely, but it's important to guard against possible failure points with these devices. For more information on potential problems with pen devices, see our November 30, 2006 newsletter article, PEN injectors: Technology is not without impENDING risks (www.ismp.org/Newsletters/acutecare/articles/20061130.asp).

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200 Lakeside Drive, Suite 200, Horsham, PA 19044 , Phone: (215) 947-7797, Fax: (215) 914-1492
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