Anesthesiology
74:790, 1991

Hazards of Reusing Disposable Syringes: I.

To the Editor:—Mangar and Wagner's letter[1] proposed a method of refilling infusion syringes by using a stopcock and secondary syringe. We are concerned that this method may not in fact provide an aseptic technique. When a syringe is filled, the plunger is exposed and subject to contamination. During infusion, the plunger secondarily contaminates the barrel so that subsequent refills can be contaminated. This mode of contamination was demonstrated in 1974 by Blogg *et al.*[2] While the method of Mangar and Wagner diminishes the hand contact time, there is still risk of contamination from other sources, since the plunger is not protected. This concern would be of paramount importance if the method were to be adapted for infusions of propofol, given the culture medium quality of the soya-bean vehicle for propofol and recent events.* We must also consider the fact that it is recommended by the manufacturer that these syringes be destroyed after single use. Implied in Mangar and Wagner's letter was the reuse of syringes prior to the adoption of this method. This apparently resulted in intermittent stoppage of the infusion. We suggest using a new syringe that can be prefilled and replaced on the pump rapidly. This should lead to a delay not longer than that described by Manger and Wagner and ensures compliance with manufacturers' recommendations and asepsis.

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* Postsurgical infections associated with an extrinsically contaminated intravenous anesthetic agent: California, Illinois, Maine and Michigan, 1990. Morbidity and Mortality Weekly Report 39:426–433, 1990.

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(Accepted for publication November 19, 1990.)

Anesthesiology
74:790, 1991

Hazards of Reusing Disposable Syringes: II.

To The Editor:—I advise against the recommendation by Mangar and Wagner[1] that syringes used with infusion pumps be refilled. Disposable syringes are provided with sufficient lubrication for single use only. With use there is a breakdown in the silicone lubricant. Refilling increases the stiction* (*i.e.*, the fractional force to be overcome to set one object in motion when it is in contact with another) between the plunger and barrel. This problem does not always occur because the breakdown of lubricant is erratic.

The new generation of infusion pumps have a much lower occlusion alarm pressure than do older models, usually about 500 mmHg as compared to over 1,000 mmHg.† As stiction increases, the infusion pumps may alarm for no apparent cause. This may explain the pump malfunction, albeit without alarms, experienced by Mangar and Wagner.

The Center for Disease Control has recently drawn attention to postsurgical infections associated with an extrinsically contaminated intravenous agent.‡ With refilling, infusions are delivered over longer periods of time from the same syringe. Extrinsically contaminating microorganisms can proliferate during the infusion interval.

It is hoped that the same syringe is never used on multiple patients.

The introduction of prefilled syringes of anesthetic agents may help overcome the problems of refilling and contamination, and would be welcomed.

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(Accepted for publication January 23, 1991.)