Transmission of blood-borne infections (e.g., HIV) from health care exposures was previously believed to be uncommon. However, multiple outbreaks across the U.S. over the last several years have shed light on this problem. Thousands of individuals exposed to potential blood-borne pathogens. As recently as October 2009, in one of the hospitals in Florida, the nurse routinely used the same bag of saline on multiple patients. In another outbreak in an outpatient oncology clinic in Nebraska, the nurse would reuse a syringe to perform a saline flush. Saline for multiple patients was acquired from a common bag. More than 600 patients were notified and 99 patients were diagnosed with Hepatitis C. These cases all have in common acquisition of saline or a drug from a common container via a contaminated needle and/or syringe. Despite the increasing use of single-dose vials, such outbreaks occur as providers still use these single-dose vials on multiple individuals to reduce costs.

Presently, syringes tipped with needles or “needleless syringes” allow withdrawal of medication from a reservoir. Use of a needleless device reduces the chance of an accidental stick by the operator. However, neither one of these systems prevents re-use of a contaminated syringe, needle or needleless device when acquiring more medication from a reservoir. In addition, when a reservoir is accessed by a needle or a needleless device, medication is allowed to flow freely. Essentially, not only can sterile medication flow from the reservoir to the syringe, but contaminated fluids can move from the syringe and contaminate the reservoir.

To prevent access of a medication from a common reservoir via a contaminated syringe, KU researchers have developed a “lock and key” device that contains a syringe adapter and a delivery assist device.

The “lock and key” system prevents accidental contamination. This design would help prevent potential “work-arounds,” i.e. trying to find a way to use a standard syringe to access the medication through the delivery device.

This device differs in that one can only access medication from the sterile reservoir with a sterile syringe attached to a sterile syringe adapter. This system would not allow an individual with a standard syringe and needle to access the medication. The device has been designed in such a way that a new sterile syringe and syringe adapter must be used, before additional medication can be accessed from the reservoir again. Also, the system has a back-up safety feature in that medication from the sterile reservoir will not flow freely once accessed. The system will not allow any fluid to flow into or out of the reservoir, thus preventing accidental contamination. This design would help prevent potential “work-arounds,” i.e. trying to find a way to use a standard syringe to access the medication through this delivery device.

Pending in US, Europe, and Japan. **US 2013/0218121**

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