Project to Collect Medical Near-Miss/Adverse Event Information

Medical Safety Information

September 2024 No.214

To mark the WHO World Patient Safety Day (September 17), we have selected orange as this month's theme color.

World Patient Safety Day 17 September

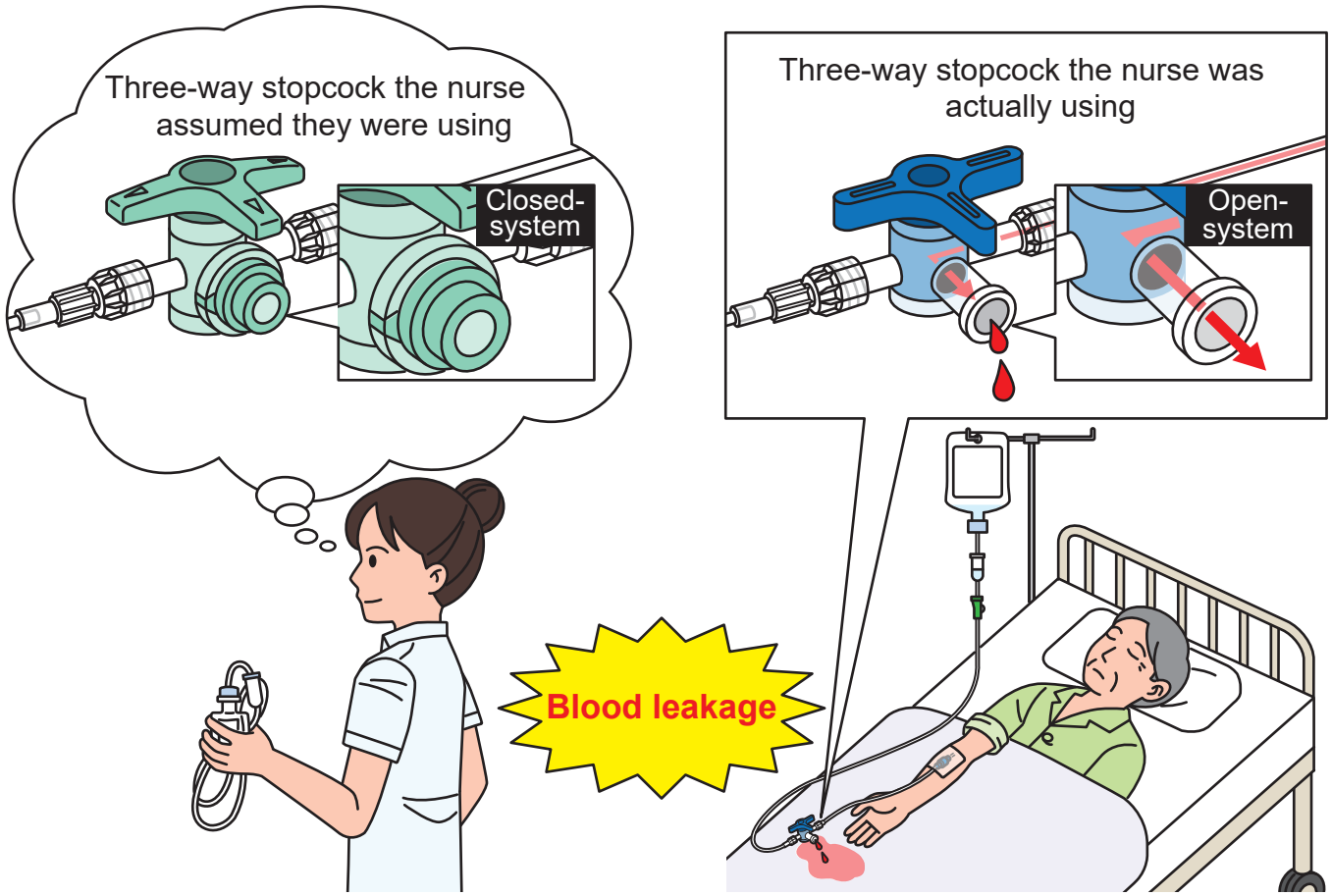
Ministry of Health, Labour and Welfare page on WPSD

Incorrect Handling of Open-System Three-Way Stopcock

Cases have been reported in which blood or a drug solution leaked from an infusion line because a staff member handled an open-system three-way stopcock in the same way as a closed-system three-way stopcock.

Seven such cases were reported between January 1, 2020 and July 31, 2024. This information was compiled on the basis of the content featured in the Analysis Themes section of the 75th Quarterly Report.

Image of case



Incorrect Handling of Open-System Three-Way Stopcock

Case 1

At the medical institution in question, the procedure was to use open-system three-way stopcocks in the operating theater and closed-system three-way stopcocks on the wards. When the patient returned to their room from the operating theater, the ward nurse forgot to replace one of the open-system three-way stopcocks with a closed-system one. When the antibiotic being administered via the side duct of the patient's peripheral venous line ran out, the nurse removed the side duct line. However, having assumed that it was a closed-system three-way stopcock, the nurse left the stopcock switched to open and, without attaching a cap to it, left the room. When the nurse subsequently visited the room, they found that a large quantity of blood had leaked from the three-way stopcock and the patient's blood pressure had fallen into the 90 mmHg range.

Case 2

Although the hospital had decided to use closed-system central venous lines, on this occasion a different route had been set up, to which an open-system three-way stopcock had been attached. As the albumin preparation that was being administered via the side duct of the patient's central venous line had run out, the nurse removed the side duct line. Having assumed that it was a closed-system three-way stopcock, the nurse left the stopcock switched to open and, without attaching a cap to it, left the room. When the nurse subsequently visited the room, they found that the patient's nightwear was wet and realized that the infusion was leaking from the three-way stopcock.

Preventive measures taken at the medical institutions in which the events occurred

-When removing an infusion line or syringe, check that the three-way stopcock has not been left open.

The measures above are examples. Please consider initiatives suitable for your own facility.

Key Preventive Measures

○ **Ensure widespread awareness of the types of three-way stopcocks and infusion routes used in the department/ward.**

(Comprehensive Evaluation Panel)

* As part of the Project to Collect Medical Near-Miss/Adverse Event Information (a Ministry of Health, Labour and Welfare grant project), this medical safety information was prepared based on the cases collected in the Project as well as on opinions of the "Comprehensive Evaluation Panel" to prevent the occurrence and recurrence of medical adverse events. See the Project website for details.
https://www.med-safe.jp/
* Accuracy of information was ensured at the time of preparation but cannot be guaranteed in the future.
* This information is intended neither to limit the discretion of healthcare providers nor to impose certain obligations or responsibilities on them.

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