



Project to Collect Medical Near-Miss/
Adverse Event Information

Medical Safety Information

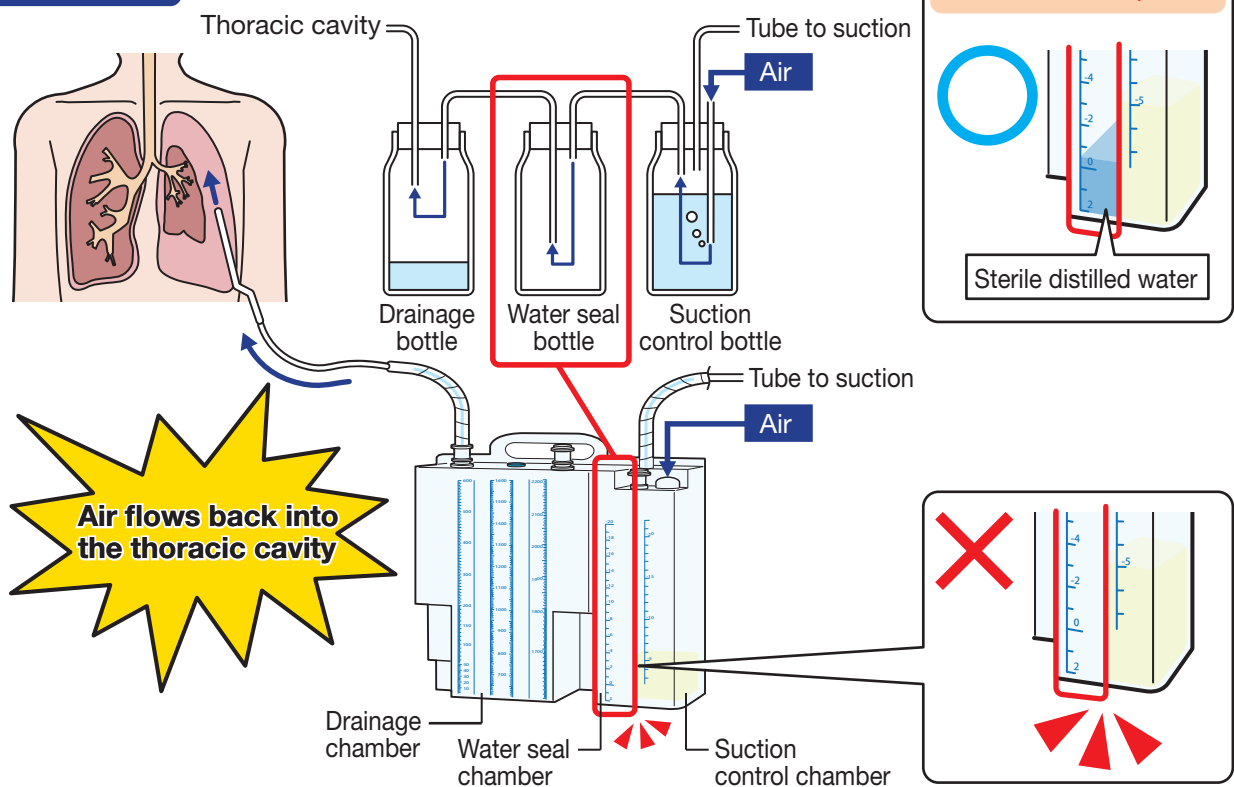
Chest Drain Left Open to Air

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Four cases have been reported in which the thoracic cavity was left open to air because sterile distilled water was not put into the water seal chamber when using a chest drainage bag (information collection period: from January 1, 2013 to October 31, 2017). This information was compiled on the basis of content featured in the Analysis Theme “Events Related to Management of Chest Drainage Bags” (50th Quarterly Report).

If a chest drain is connected without putting sterile distilled water into the water seal chamber of the chest drainage bag, air flows back into the thoracic cavity due to its negative pressure, hindering ventilation.

Image of case 1



◆ An illustration of the chest drainage bag mechanism can be found on p. 40 of the 50th Quarterly Report (published in September 2017). (http://www.med-safe.jp/pdf/report_2017_2_T002.pdf)

Chest Drain Left Open to Air

Case 1

Nurse A did not know that sterile distilled water should be put into the water seal chamber of the chest drainage bag. When changing the chest drainage bag with the physician, Nurse A opened the bag at the bedside and passed it to the physician as it was. The physician connected the bag to the drain. Nurse B subsequently noticed that there was no sterile distilled water in the bag's water seal chamber. The patient developed tachypnea, had SpO₂ of 87%, and complained of respiratory discomfort.

Case 2

The physician inserted a chest drain and ordered that it should be managed with a water seal. The nurse put sterile distilled water into the chest drainage bag's suction control chamber instead of the water seal chamber and then connected the bag to the drain. Another nurse noticed the error immediately.

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

- A procedure for preparing chest drainage bags will be formulated.
- Staff will be educated in the appropriate use of chest drainage bags.

* 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.

<http://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.

