Japan Council for Quality Health Care

Project to Collect Medical Near-Miss/ Adverse Event Information

Medical Safety Information

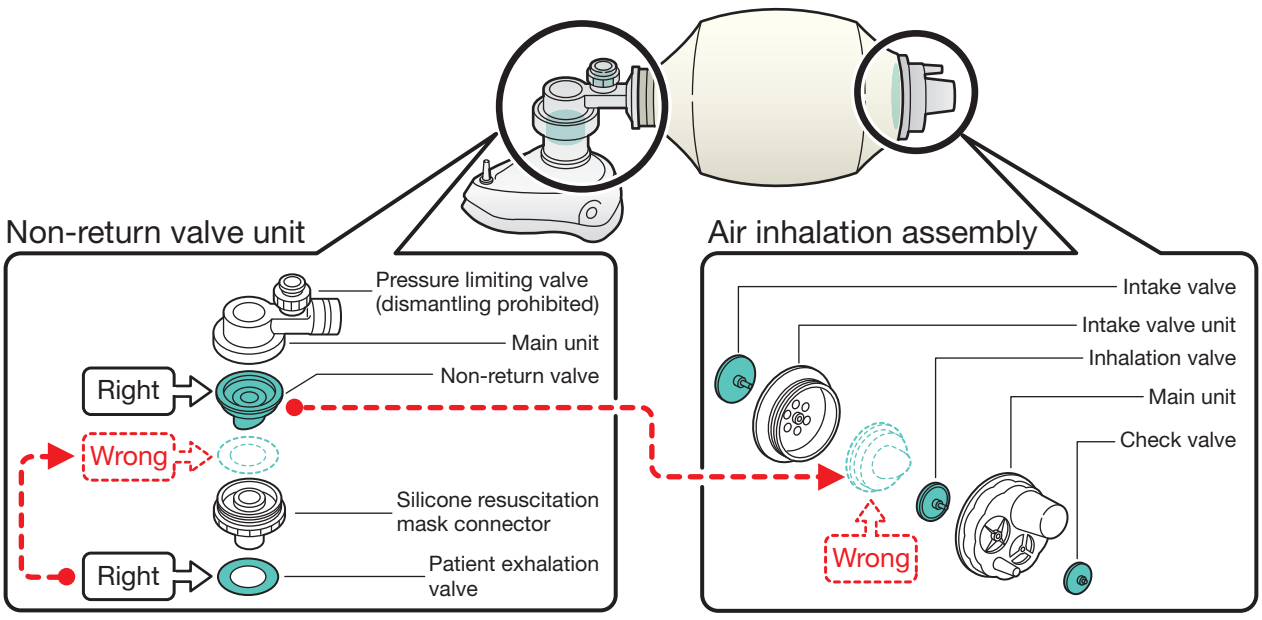
No.74, January 2013

Wrongly Assembled Manual Resuscitator

Two cases have been reported involving the failure to carry out effective ventilation, due to a wrongly assembled manual resuscitator (information collection period: from January 1, 2009 to November 30, 2012; the information is partly included in “Individual Theme Review” (p.151) in the 30th Quarterly Report).

Cases involving the failure to carry out effective ventilation due to a wrongly assembled manual resuscitator have been reported.

Image of the manual resuscitator used in Case 1



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Case 1

The patient's general condition deteriorated and his/her respiratory condition declined, so resuscitation was attempted using a bag valve mask (MMI silicone resuscitator bag), but the patient suffered hypoxic encephalopathy. This was thought to be due to an incorrectly assembled bag valve mask having been used. The resuscitator had been wrongly assembled at two points: (1) the patient exhalation valve was attached at the point where the non-return valve was meant to be, inside the non-return valve unit; and (2) the non-return valve was attached inside the main unit of the air inhalation assembly.

Case 2

When changing the ventilator circuit, 5L of oxygen was used in the Ambu (Ambu resuscitator bag). The nurse handling the resuscitator had used the Ambu several times up to that point and although s/he had the impression that it did not have the same resistance (sensation of being filled with gas) as usual, s/he thought that s/he was not squeezing it the right way. The patient's SpO_2 and heart rate subsequently declined and cardiac massage was carried out. At a later date, when the Ambu was checked because questions had arisen about the way in which it had been used, it was found that the membrane valve in the Ambu had been fitted incorrectly.

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

- **A specific department (such as the clinical engineering department) will be made responsible for the cleaning and assembly of manual resuscitators.**
- **The staff members tasked with such duties will assemble manual resuscitators in accordance with the instruction manual and check that they work.**

Complementary comment by the Comprehensive Evaluation Panel

- **Ensure that the assembly of manual resuscitators is carried out by proficient staff, and that they always check that the resuscitator is working properly after they have assembled it.**
- **When using a manual resuscitator on a patient, confirm appropriate ventilation of the patient by observing chest wall movement.**

* 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 quarterly reports and annual reports posted on the Japan Council for Quality Health Care website for details of the Project.
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.

Division of Adverse Event Prevention
Japan Council for Quality Health Care
1-4-17 Misakicho, Chiyoda-ku, Tokyo 101-0061 JAPAN
Direct Tel: +81-3-5217-0252 Direct Fax: +81-3-5217-0253
http://www.jcqhc.or.jp/