1. Selection of the Proper HME/HCH Device Class

Determine device output according to 3rd party independent testing using ISO 9360 Standard

Class I Device Highest Humidity Return

(Humidity output > 30 mg H_2O / L air @ 20L V_E)

Use this Class according to the following protocol (see #2). Use these devices in Acute Care Hospitals, SubAcute Care, Home Vents and Class I, II and III patients.

Class II Device Moderate Humidity Return

(Humidity output >30 mg H_2O/ L air at a 10L V_E)

Limit to patients with <10 L V_E. (SubAcute Care, Home Vents, and Class III patients)

Class III Device Lowest Humidity Return

(Humidity output <30 mg H_2O/ L air at any V_E)

Limit to short term use - less than 24 hours (anesthesia, recovery, transport)

References:

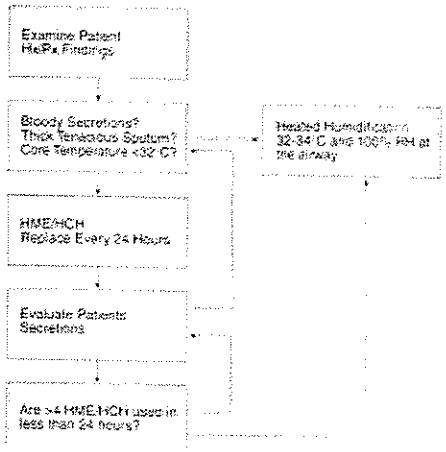
ANSI Z79.9. ¶3.1.1.2 For devices that bypass the subject's upper airway, a fluid output of 30 mg/liter shall fall within the operating range. A heater may be used for this purpose.

ISO 8185. ¶ 60.1. Humidifiers intended for intubated patients shall have a liquid output of at least 30 mg/l.

AARC CPG. HMV 2.0 The chosen device should provide a minimum of 30 mg H_2O/L of delivered gas at 30° C.

2. Protocol

The following chart explains the process in using and evaluating the HME/HCH Devices (University of Cincinnati - Chart, Evaluation of Humidification Device.)



3. Evaluation

A. Evaluation of Secretions (Suzukawa, et al., *Respiratory Care*, Nov. 1989)

Watery — Sputum that can be suctioned like water. After suction is terminated, no secretions remain attached to the inner surface of the suction catheter.

Moderate — Sputum of moderate viscosity. After suction is terminated, some secretions remain attached to the inner surface of the suction catheter, but they can be easily washed out by suctioning water through the catheter.

Tenacious — Thick sputum. After suction is terminated, most secretions are still attached to the inner surface of the suction catheter, and they cannot be easily removed by suctioning water through the catheter.

B. Evaluation of Condensate (Beydon, et al. Chest, Sept. 1997)

The apparent water condensed in the flex tubing seems to be the best indicator of humidifying efficiency (after 24h of use).

0 = dry
1 = mist without drops
2 = drops without condensation
3 = water condensation