

Check list for ICU staff: Usage of anaesthesia devices for long-term ventilation

Target group:

ICU staff without experience in anaesthesia. They shall be quickly enabled to handle the machine. An expert on the machine (i.e. OR nurse) is in reach and can solve more complex matters.

Basics:

1. Get a basic device introduction by an OR colleague, if possible
2. An experienced anaesthesia user (e.g. OR nurse) has to be in reach 24/7
3. In case of problems with the ventilation or the machine call the expert early
4. If possible, use the anaesthesia device for CMV ventilation modes only
5. For NIV-like modes preferably stay with the ICU ventilator. If this is not possible use Perseus and Zeus preferably
6. Remove the anaesthetic agent dosage devices (vaporizers or DIVAs)
7. In case of unexpected problems use the external manual breathing bag. The mode Man/Spont must only be used in the presence of an OR experienced staff member. It does not compare to spontaneous modes on the ICU ventilator
8. The alarm management is designed for the OR environment.
 - a. alarm messages will disappear from the screen when the alarm condition is gone
 - b. no alarms will be transmitted to the alarm central.Hence:
 - a. Turn the alarm sound to 100%
 - b. Stay in sight / hearing distance
9. Check: Is the soda lime still min 1/3 white? If no, ask for help
10. Check: Is the water trap more than half full? If yes, ask for help
11. Is there water in the breathing hoses? If yes, empty them
12. Is the breathing filter wet or soaked? If yes, change
13. Turn the fresh gas flow to approx. 1,5 times the anticipated minute volume
14. Observe the measured FiO₂. If the difference is more than 5%, ask for help
15. The sample gas line must always be connected
16. The usage of breathing hoses and filters is the same as on an ICU ventilator
17. If you miss a parameter on the screen that seems important to you: Ask for help
18. The manual breathing bag on the device shall always be well filled and move synchronously with the breaths. It may be filled additionally by using the O₂+ button. If possible, use large manual breathing bags (3 litres).
19. No kind of high flow or high frequency therapy is possible

When actually starting a case:

1. A member of the OR team should be at place, whenever possible
2. Check the correct fit of breathing hoses, the manual breathing bag and the sample gas line
3. Set the fresh gas flow to approx. 1,5 times the anticipated minute volume
4. Check the alarm sound to be on 100%
5. Adjust the alarm limits appropriately for the patient.
6. Make sure that a member of the OR team is in reach 24/7

When starting the shift:

1. Check: Is the soda lime still min 1/3 white? If no, ask for help
2. Check: Is the water trap more than half full? If yes, ask for help

Regular test after 72 hours

1. After 72 hours a full device test is due to assure proper functioning, e.g. for the flow / volume measurement. This test may take up to 10 minutes and should be done by an experienced member of the OR team
2. The patient must be disconnected prior to the test.