

Pre-operative Checking of anesthetic equipment

By: Dr. Azad J. Ali

Senior anesthesiologist

Teaching Hospital

Sulaimaniyah- Kurdistan Region-Iraq

Pre-operative Checking of anesthetic equipment

- ***According to Association of Anesthetists of Great Britain and Ireland (AAGBI) safety guidelines, practice of checking of anesthesia equipment by anesthesiologist and anesthesia nurse or technician is mandatory to ensure the correct functioning which is essential to patient safety.***
- ***This guide-line is not a standard of medical care. The ultimate judgment must be made by the clinician with regard to a particular procedure or treatment plan.***

Pre-operative Checking of anesthetic equipment

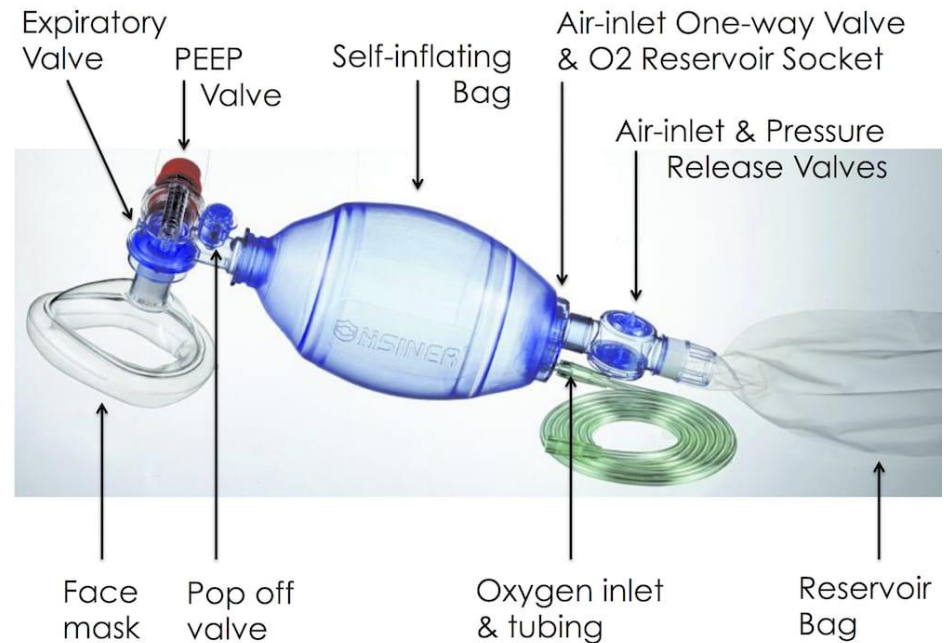
- ***The anesthesiologist has the primary responsibility to understand the function of the anesthetic equipment and check it before use.***
- ***Anesthesiologists must not use equipment unless they have been trained to use it and are competent to do so.***
- ***Checks must be performed at the start of every operating session (every 24 h).***

Pre-operative Checking of anesthetic equipment

- 1. Check self-inflating bag available.***
- 2. Perform manufacturer's (automatic) machine check.***
- 3. Power supply.***
- 4. Gas supplies and suction.***
- 5. Breathing system.***
- 6. Ventilator.***
- 7. Scavenging.***
- 8. Monitors.***
- 9. Airway equipment.***
- 10. Record this check in the patient record.***
- 11. Don't forget.***

1-Check self-inflating bag available

- A self-inflating bag must be immediately available in any location where anesthesia may be given.***



2-Perform manufacturer's (automatic) machine check

refer to the link below

3-Power supply:-

(anesthetic machine, monitor, defibrillator).

- 1) Plugged in.*
- 2) Switched on.*
- 3) Back-up battery charged.*

4-Gas supplies and suction

- ***Gas and vacuum pipelines – “tug test”.***
- ***Cylinders filled and turned off.***
- ***Flowmeters working(if applicable).***
- ***Hypoxic guard working.***
- ***Oxygen flush working.***
- ***Suction clean and working.***

5-Breathing system

- ***Whole system patent and leak-free using “two-bag” test.***
- ***Vaporizers-fitted correctly, filled, leak-free, plugged in (if necessary).***
- ***Soda lime- color checked.***
- ***Alternative system(Bain, T-piece)-checked.***
- ***Correct gas outlet selected.***

5-Breathing system

The two-bag test:

- ***Should be performed after the breathing system, the ventilator and the vaporizers have been checked individually.***
- ***Attach the patient end of the breathing system(including the angle piece and filter) to a test lung or bag.***
- ***Set the FGF to 5L/min and ventilate manually. Check the whole breathing system is patent and unidirectional valves are moving.***
- ***Check the function of the APL valve by squeezing both bags.***
- ***Turn on the ventilator to ventilate the test lung.***
- ***Turn off the FGF, or reduce to a minimum.***
- ***Open and close each vaporizer in turn.***
- ***There should be no loss of volume in the system.***

6-Ventilator

- ***Working and configured correctly:-***
 - 1) Mode of ventilation(spontaneous or controlled).***
 - 2) Tidal volume(V_T).***
 - 3) Respiratory rate(frequency).***
 - 4) I:E ratio.***
 - 5) PEEP setting.***
 - 6) Alarm limits and volumes (V_T , P_{aw}).***

7-Scavenging

- *Working and configured correctly.*

8-Monitor

- *Working and configured correctly.*
- *Alarm limit and volumes set.*

9- Airway equipment

Full range required, working, with spares.

***10-Record this check in the
patient record***

11- Don't forget

- 1) Self inflating bag.***
- 2) Common gas outlet.***
- 3) Difficult airway equipment.***
- 4) Resuscitation equipment.***
- 5) TIVA and/or other infusion equipment.***

Using the WHO Safer Surgery Check list

For the sake of a safer surgery and to reduce the perioperative risks ,the WHO issued this check list which is composed of the following parts:

- ***Sign In.***
- ***Time Out.***
- ***Sign Out.***

Sign In

- 1) The patient identity, planned procedure and the surgical site marking are confirmed against the operating list . The informed consent form and the patient should be actively involved in this process.***
- 2) The anesthesia facilities (machine and drugs) are confirmed as checked and any added precaution(allergy ,airways , anticipated blood loss) identified.***
- 3) Suitable monitoring is essential during anesthesia and should be confirmed as available and functional.***

Time Out

- 1) Every one in the theatre should be known by name and role.***
- 2) A final confirmation of the patient identity and planned procedure is undertaken at this point, with reference to imaging where relevant.***
- 3) Antibiotics should be administered /confirmed ,where indicated.***
- 4) Any specific concern to the planned procedure should be reviewed by the surgeon, anesthesiologist and the nursing staff.***
- 5) Many hospitals have added a step to confirm that thrombo-embolic precautions have been undertaken.***

Sign Out

- 1) Swab and instrument counts are confirmed.***
- 2) Specimens are confirmed as correctly labeled.***
- 3) Brief discussion of any specific requirements for postoperative care (at this point)***

Google the below Related videos links

[*https://www.youtube.com/watch?v=Pxf_2ISa9m4*](https://www.youtube.com/watch?v=Pxf_2ISa9m4)

[*https://www.youtube.com/watch?v=Ywjy3UWhcgM*](https://www.youtube.com/watch?v=Ywjy3UWhcgM)