Manual Ventilation

Robert A. Milisch MEd, RRT

Purpose of This Training

This training is developed to demonstrate equipment or procedures that are to be used by qualified health care providers who are operating within the scope of their practice. Individual institutional policies and procedures must be followed at all times. It may also be used to train respiratory therapy extenders who would function as respiratory assistants working under the license of a respiratory therapist in the event of a disaster. The role of extenders would be decided by the institution or by the state. Viewing this demonstration does not imply competence. Competence in any of these procedures must be assessed by the institution where you practice.

Why Manual Ventilation

Readily available
Should be in every room that has a ventilator patient
Can deliver up to 100% oxygen
Can assist a spontaneously breathing patient
Simple to use – in intubated patients
Can be used by one person

Manual resuscitators

Self-inflating
Flow-inflating bag
Manual resuscitators
Demand valves

Self-inflating Bag-valve-mask (BVM) recuscitators

Non-rebreathing valves
Inlet leaf valves
Reservoir

Testing Bag Function

Occlude outlet with thumb
Ventilate test lung

BVM function

(American Society for Testing and Materials, International Standards Organization)
Should deliver at least:
600 ml for adults
300 ml children
20 ml infants
Pressure limits:
None for adults
40 ($\pm$ 10) cwp children
40 ($\pm$ 5) cwp for infants
Pressure manometer essential for infants

F_IO2 delivered
At least 85% at 15 lpm and reservoir
30-40% with oxygen and no reservoir
Oxygen flow
Rate
Bag refill time
Room air without oxygen

Bag-Valve-Mask Ventilation
The E – C technique
Two handed technique

Oropharyngeal Airway
Holds tongue away for airway
Not used with conscious patient of active gag reflex

Oropharyngeal Airway
Corner of mouth to angle of jaw
Oropharyngeal Airway
Insert upside down and rotate

Nasopharyngeal Airway
Used with conscious patient or active gag reflex
Nasopharyngeal Airway
Nare to attachment of ear
Lubricate
Insert (twist) posteriorly

Ventilating Via Artificial Airway
Assurance of ventilation (leaks)
Tendency to over ventilate
Spontaneous or assisted breathing possible
Manual ventilation
Easy to over ventilate
Breathe 12-16 times per minute
Find a mechanism to remind you of rate
Synchronize with patient efforts
Assess chest rise and fall
One handed = $\pm$500 ml
Two hand = $\pm$1000 ml

Monitor
SpO2
Color
HR

Hazards
High airway pressures
Particulate mater in exhalation port
Leaks when used with mask
False sense of ventilation
Improperly functioning valves
Test prior to use

Conclusion
Manual ventilation can be used during patient transport, during certain procedures, when there are no regular ventilators available or when regular ventilators are not functioning properly.

Contact milischr@westerntc.edu if there were any problems with the presentation

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