Policy:
Nurses can provide and manage care of a client with a Heimlich Valve in the home or clinic environment. A physician or RN(EC)’s order is required outlining care and maintenance.

Background Information:
A Heimlich valve is a one-way valve that allows air to flow out of the chest through the chest tube when the client breathes out but prevents air from entering the chest when the client breathes in. The valve is connected to a chest tube on one side and is either open to the air or attached to a drainage bag.

The Heimlich valve is small and lightweight so that clients can move around easily. The Heimlich valve is best suited for an uncomplicated pneumothorax that requires little or no drainage collection or suction. It is not recommended for clients with large amounts of drainage (more than 50 ml) or many blood clots.

A large bore needle (#14G) or chest tube is inserted at the second intercostal space, midclavicular line on the affected side. The Heimlich valve is contained in a clear, hard plastic shell and is attached to connecting tubing, which in turn attaches to the client’s chest tube. The valve consists of rubber flutter leaflets that are compressed at the distal end. These leaflets allow one-way flow so that air, fluid or blood clots exiting through the valve do not return to the pleural space.
When attaching the valve to the connecting tubing, **make sure the arrow on the valve points away from the client.** Otherwise, a life-threatening tension pneumothorax could result.

Make sure that the thoracic catheter and connecting tubing do not kink.

If the valve is draining blood or fluid, a sterile 4X4 or drainage bag is applied to the distal end. If the client has a pneumothorax, the valve’s distal end will remain uncovered.

The Heimlich valve functions in any position, so it does not need to be kept below the client’s chest level.

If additional suction is required, attach the distal end of the valve to a suction machine.

As the client breathes or coughs, the valve will probably flutter. You should hear and feel air exiting the valve’s distal end if the client has a pneumothorax.

In most clients, the valve continues to flutter even after a pneumothorax has resolved because of changes in intrapleural pressures. If the fluttering stops, the pneumothorax may have resolved, or the thoracic catheter, connecting tubing or valve may be clogged. If the fluttering stops, assess the client for shortness of breath, auscultate the lungs and inspect the catheter and valve.

Bathing or showering will be dependent on the physician or RN(EC)’s preference. It is important that the Heimlich valve is not submersed directly into water. If bathing or showering is approved, the valve and dressing must be covered with a plastic bag or wrap.
Client teaching:

- It is normal to hear airflow from the valve and to see the valve flutter
- Pulsation of the valve leaflet and/or a “honking or duck like sound” is normal.
- Importance of keeping tubing connections and the dressing site airtight.
- Signs and symptoms of potential problems – shortness of breath, stridor or chest pain, or if the valve stops fluttering and there is no airflow heard – and how to deal with them. The client should be instructed to check the connections to ensure they are airtight and not leaking. If the symptoms do not improve with that intervention, tell the client to page the nurse immediately.
- Signs and symptoms of infection around the tube site.
- Change dressing if client identifies leakage through existing dressing
- Proper disposal of chest tube drainage and used dressings.

Procedure for dressing change:

The type of dressing and frequency of the dressing changes should be identified by the physician or RN(EC). The dressing used could be either a dry dressing or a petrolatum-impregnated gauze dressing, followed by a dry dressing, depending on the medical orders.

Equipment:

- non-sterile gloves
- sterile gloves
- trach dressing
- 4X4 gauze
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P&P: Heimlich Valve Care

- chlorhexidine swab
- alcohol pads
- two inch wide tape

Procedure:
1. Gather supplies and explain procedure to client.
2. Perform hand hygiene.
3. Don non-sterile gloves.
4. Remove and discard old dressing, being careful not to pull on the chest tube.
5. Assess skin around at the site for signs and symptoms of infection.
6. Remove gloves and perform hand hygiene.
7. Don sterile gloves.
8. Using a chlorhexidine swab clean around chest tube in a circular motion from middle outward approximately 8 cm area.
9. Let area dry for 2 minutes.
10. Place the trach dressing on skin around chest tube.
11. Place 4X4 over top of the trach dressing and tape around each side.
12. Secure the Heimlich valve to the client’s body to prevent the pulling or kinking of the chest tube.
13. Remove gloves and perform hand hygiene.