PURPOSE:
To provide guidelines for the application and removal of an intermittent pneumatic pump (IPP). To ensure IPP is successful in controlling the swelling of lymphedema.

CONSIDERATIONS:
1. Lymphedema occurs when there is a blockage of the lymph nodes or disruption of the local lymphatic channels. The protein-rich lymphatic fluid is unable to drain from the tissue, causing interstitial edema with swelling of the affected site.
2. Diuretics have no role in the treatment of lymphedema.
3. IPP devices provide sequential active compression from distal to proximal, effectively milking the lymph from the extremity and back into the lymphatic system.
4. Contraindications to IPP include congestive heart failure, kidney or renal failure, body-wide edema, pleural effusions, pulmonary embolism, deep vein thrombosis, thrombophlibitis, and active infection.
5. Pump pressure should never be set to exceed the patient’s diastolic blood pressure. Typically, the pump’s pressure should be set 15-20% or more below the patient’s diastolic pressure.
6. It is recommended for the arm extremity not exceed 40 mm Hg of pump pressure and pressures should not be set higher than 60 mm Hg for all sites.
7. Pumps should not be applied over compression bandaging or compression stockings.
8. Pumps should not be used during sleep over night.
9. Pumps can be used when venous ulcers or open wounds are present as long as there are no signs of infection or cellulitis. The wound or ulcer must be covered with a sterile dressing material to catch any fluid forced out.
10. Pump sessions can range from 1 to 4 hours daily. It is more advantageous to pump in the evening before bedtime. If unable to complete a full session at one time, consider
   a. Thirty minutes to two hours in the morning,
   b. Thirty minutes to two hours in the evening
11. Frequency for active treatment usually occurs on a daily basis. Maintenance schedules decrease frequency to every other day, to every second day and then twice weekly and then as needed for continued edema reduction.
12. Manual lymph drainage (MLD) stimulates the lymphatic vessels in preparation for receiving the flow of lymph created by the pump and must be carefully completed prior to IPP therapy to prevent any damage to the tissues.

EQUIPMENT:
Intermittent pneumatic pump (IPP)
Compression bandages, as needed
Compression stockings, as needed
Compression garment, as needed
Foam compression binders, as needed

PROCEDURE:
1. Review physician orders.
2. Measure patient’s affected extremity/site.
3. Take patient’s blood pressure.
4. Make note if the pump is single action (Drainage Phase) versus dual phases (Preparatory and Drainage phases).
5. If it is a single phase pump, prepare for the IPP session by performing MLD by massaging the extremity, working from the end of the limb upward toward the terminus.
6. Apply foam compression binders to extremity/site.
7. Apply IPP sleeves/garment.
8. Adjust pump pressure settings in accordance to patient’s diastolic blood pressure, device instruction manual and physician order.
9. Position patient in a comfortable position which facilitates lymphatic drainage and venous return.
10. Initiate pump for ordered time period.
11. Once pump session complete, remove IPP sleeves and foam compression binder.
12. Perform a brief MLD session by working from the end of the treated limb upward toward the terminus to help the released fluid return to the cardiovascular system.
13. Measure patient’s affected extremity/site.
14. If pump session occurs in the morning, apply knit compression. If pump session occurs at night, use compression garment.

AFTER CARE:
1. Record IPP Therapy session settings and patient response.
2. Follow-up with physician for setting or frequency changes in addition to patient response requiring attention.

REFERENCES: