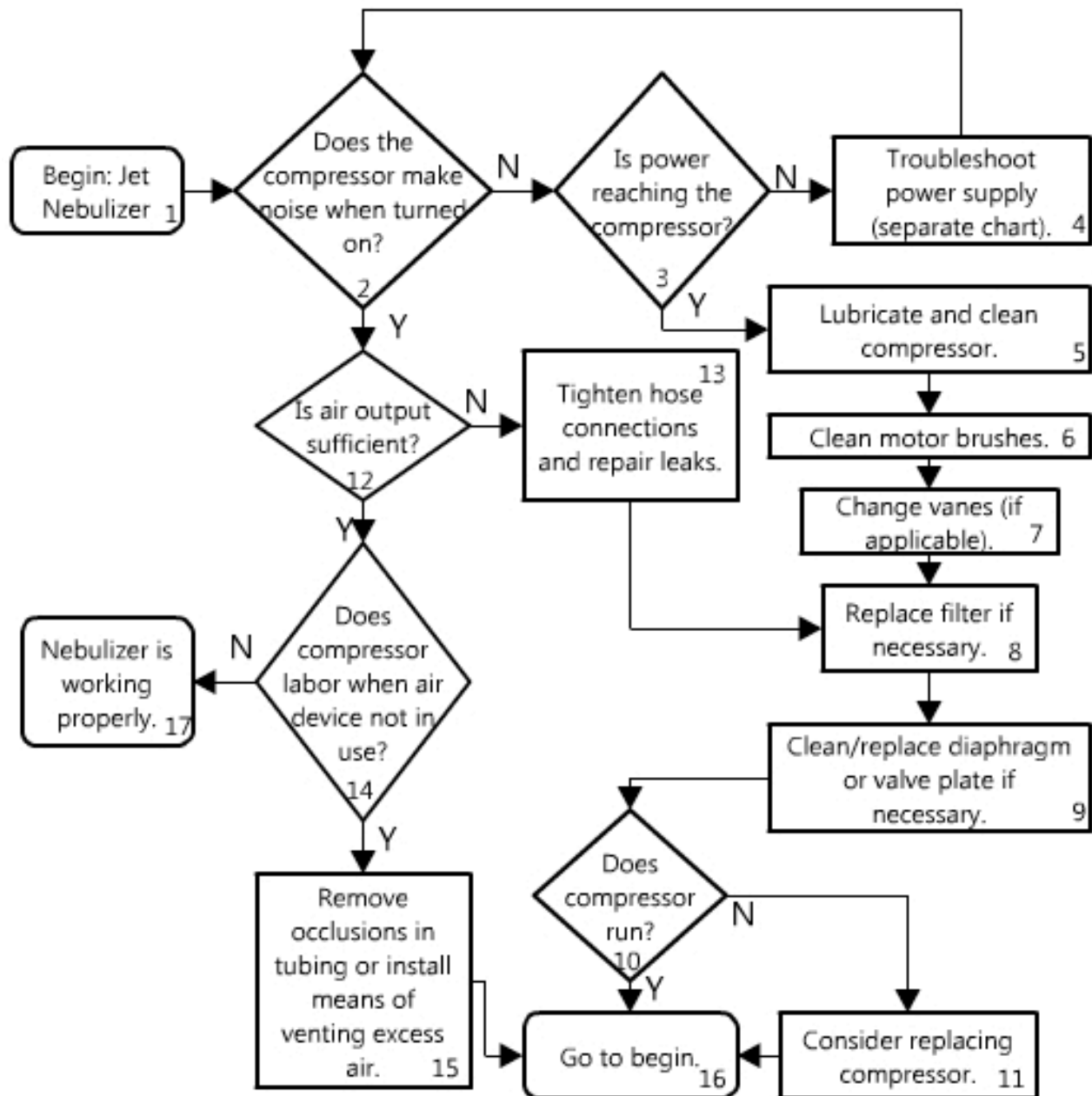


Nebulizer Troubleshooting

Diagnostic flowchart (Jet Nebulizer)

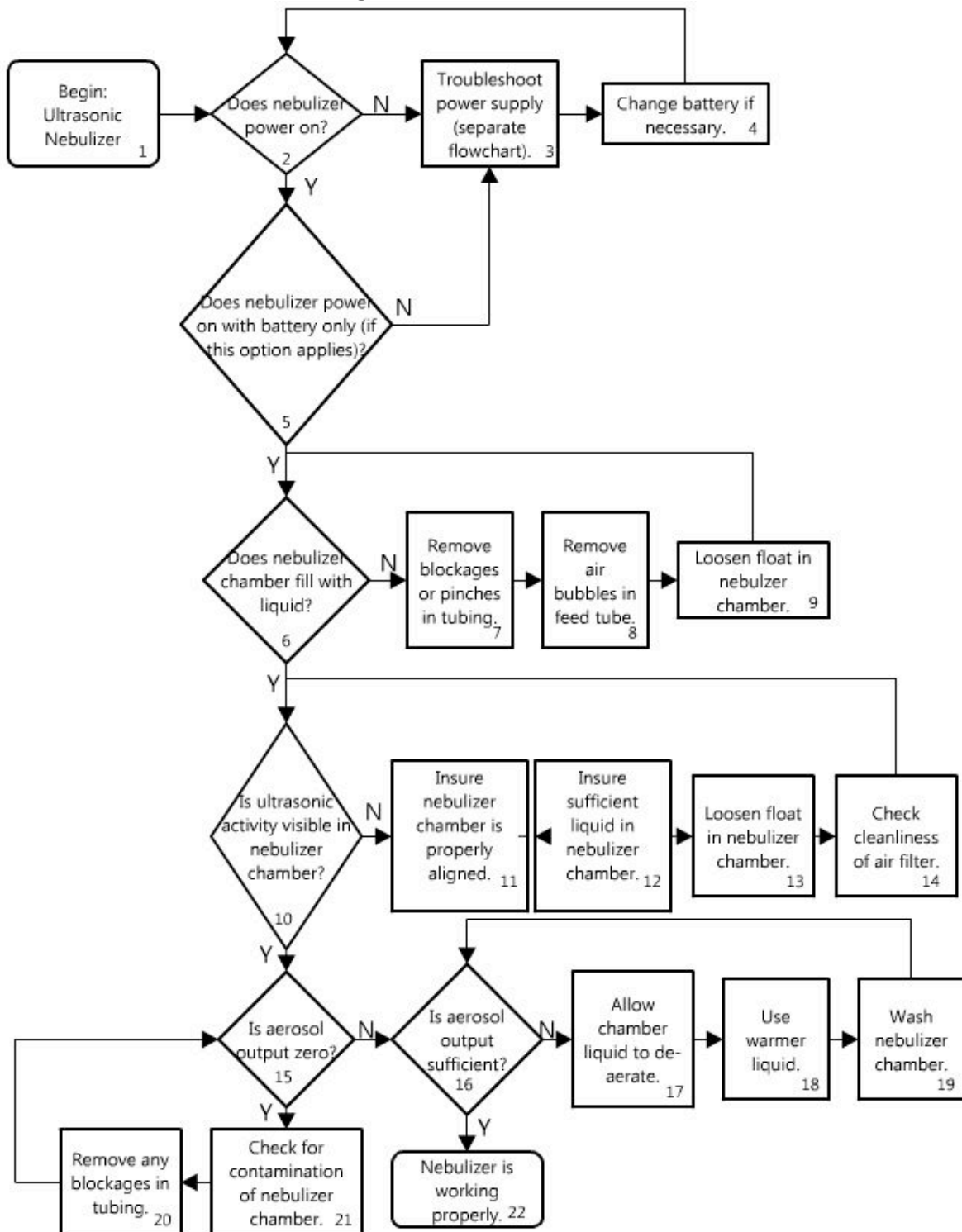
Jet nebulizers use a compressor to force a jet of air through a container with liquid medication. The liquid medication is converted into a mist for breathing.



#	Text box	Explanation or Comment
1	Begin Jet Nebulizer	A jet nebulizer has little or no output.
2	Does the compressor make noise when turned on?	A working suction machine makes noise when the device is turned on.
3	Is power reaching the compressor?	Use a multimeter to determine if proper voltage is reaching the wires.
4	Troubleshoot power supply (separate chart).	If no power reaches the pump, there may be problems with the switch, fuse, or wiring. If the motor is DC, check the power supply.
5	Lubricate and clean compressor.	See BTA skills on cleaning / lubricating motor.
6	Clean motor brushes.	See BTA skills on motor brushes.
7	Change vanes .	The vanes on rotary vane pumps may wear out. The vanes may be replaced, but the vanes are expensive and difficult to find.
8	Replace filter.	Nebulizers have an air intake filter. If air intake filter appears gray or dirty, replace filter.
9	Clean/replace diaphragm or valve plate.	The diaphragm of a diaphragm or membrane pump should be cleaned.
10	Does compressor run?	After each attempt to repair the motor, test to see if motor works.
11	Consider replacing compressor.	If the motor cannot be repaired, replace the motor or the entire unit.
12	Is air output sufficient?	Has clinical staff noticed a reduction in air output?
13	Tighten hose connections and repair leaks.	See BTA skills on plumbing connections and leaks.
14	Does compressor labor when air device not in use?	The motor should not shake or make excessive noise when the air device is not in use.
15	Remove occlusions in tubing or install means of venting excess air.	See BTA skills on plumbing blockages. A pressure regulator could be installed to vent excess air.
16	Go to begin.	Restart the diagnostic process to see if the corrective measures have repaired the machine.
17	Nebulizer is working properly.	Return the machine to service via the appropriate clinical personnel.

Diagnostic flowchart (Ultrasonic Nebulizer)

Ultrasonic nebulizers use a vibrating piezoelectric element. The liquid medication is converted into a mist for breathing.



#	Text box	Explanation or Comment
1	Begin: ultrasonic nebulizer	Start the diagnostic process on an ultrasonic nebulizer.
2	Does nebulizer power on?	Lights, displays, and sounds indicate the device is powered on.
3	Troubleshoot power supply (separate flowchart).	Ultrasonic nebulizers generally have an AC-DC power supply.
4	Change battery if necessary.	If there is battery, test its ability to receive and hold a charge.
5	Does nebulizer power on with battery only?	Check if the machine will run on battery when power is unplugged.
6	Does nebulizer chamber fill with liquid?	The nebulizer may have a liquid reservoir that fills with the liquid medication. Verify that machine will fill this chamber.
7	Remove blockages or pinches in tubing.	See BTA skills on plumbing blockages.
8	Remove air bubbles in feed tube.	Remove the bottle, invert, and replace bottle to get air bubbles out of the tubing.
9	Loosen float in nebulizer chamber.	Insure float system is loose and moves freely and there are no obstructions in the cap or lid.
10	Is ultrasonic activity visible in nebulizer chamber?	Ultrasonic nebulizers use sound vibrations to create vapor droplets from liquid. This ultrasonic activity should be visible.
11	Insure nebulizer chamber is properly aligned.	Verify mechanical connections are correct and secure.
12	Insure sufficient liquid in nebulizer chamber.	Add liquid to the chamber.
13	Loosen float in nebulizer chamber.	Insure float system is loose and moves freely and there are no obstructions in the cap or lid.
14	Check cleanliness of air filter.	Air filters must be changed when they become dirty.
15	Is aerosol output zero?	Verify that aerosol mist is produced.
16	Is aerosol output sufficient?	Clinical staff has complained of low aerosol (medicine) output.

17	Allow chamber liquid to de-aerate.	Wait for machine to de-aerate.
18	User warmer liquid.	Warm the liquid in use.
19	Wash nebulizer chamber.	Use water and diluted vinegar or alcohol. See BTA skills on cleaning.
20	Remove any blockages in tubing.	See BTA skills on plumbing blockages.
21	Check for contamination of nebulizer chamber.	Use water and diluted vinegar or alcohol. See BTA skills on cleaning.
22	Nebulizer is working properly.	Return the machine to service via the appropriate clinical personnel.