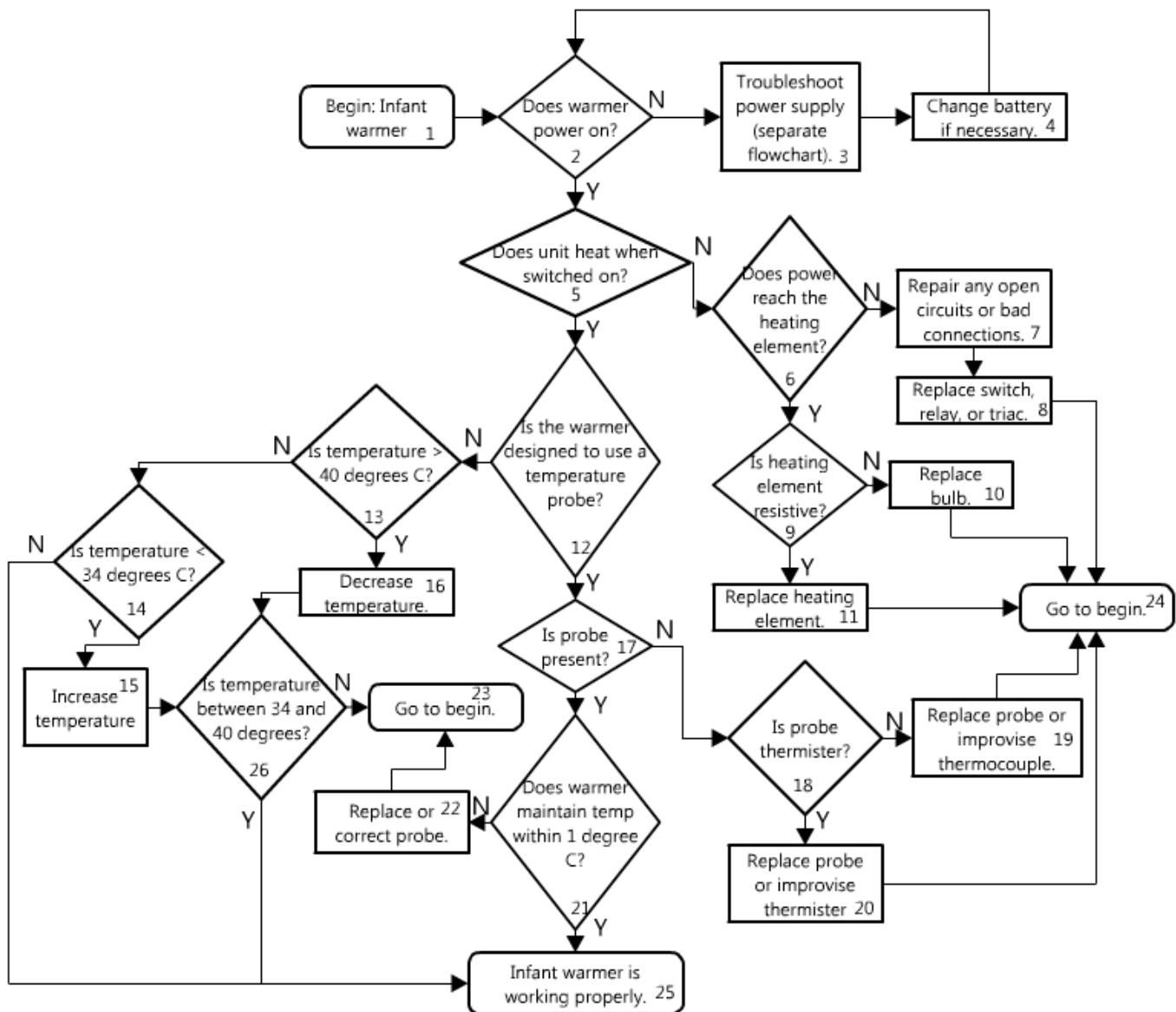


## Troubleshooting Flowchart for Infant Warmer



#	Text Box	Comment or Explanation
1	Begin: Infant warmer	Begin diagnostic process for infant warmer.
2	Does warmer power on?	Lights, displays, and sounds are all indications that the device has powered on.
3	Troubleshoot power supply (separate flowchart)	Most infant warmers have AC-DC power supplies.
4	Change battery if necessary.	Many infant incubators have batteries.
5	Does unit heat when switched on?	Does the device produce heat when the warmer is switched on?
6	Does power reach the heating element?	If no heat is produced, test if the proper voltage is reaching the heating element.
7	Repair any open circuits or bad connections.	If power does not reach the heating element, there might be an open circuit, bad connection, or broken wire.

8	Replace switch, relay, or triac.	A switch, relay, or triac may be used to control current flow to the heating element. Ensure it is working properly.
9	Is heating element resistive?	Infant warmers typically use a resistive element or a bulb to create heat. Check which one is used in this device.
10	Replace bulb.	If a bulb is used the proper voltage is reaching the bulb, it must be replaced.
11	Replace heating element.	If a resistive element is used and the proper voltage is reaching the resistor, the element must be replaced. Resistive elements can generally be replaced with any resistor or combination of resistors with the same resistance and power ratings as the one being replaced.
12	Is the warmer designed to use a temperature probe?	If the warmer heats, it's necessary to check the temperature control methods of the device. Is a temperature probe (thermometer) used, either on the skin of the infant or in the air?
13	Is temperature > 40 degrees C?	If there is no thermometer, the temperature must be measured at patient level to ensure it stays at the desired level (typically between 34 and 40 degrees C).
14	Is temperature < 34 degrees C?	If the temperature is below 40 degrees C, confirm that is above the minimum temperature (34 degrees C).
15	Increase temperature.	Increase the temperature if it is below 34 degrees C. This might be accomplished by using control knobs to increase heat output, moving the heating element closer to the patient, and/or reducing ventilation.
16	Decrease temperature.	Decrease the temperature if it is above 40 degrees C. This might be accomplished by using the control knob to decrease output of the heating element, moving the element farther from the patient, and/or increasing ventilation.
17	Is probe present?	Confirm that the probe is present. Missing or damaged temperature probes are a common problem. Some warmers may have a manual mode to set a fixed heat output if the temperature probe is missing.
18	Is probe thermister?	If there is a temperature probe present, it will be either a thermistor or a thermocouple. Attempt to verify which it is.
19	Replace probe or improvise thermocouple.	If the probe is a thermocouple, it works by providing a voltage source that varies in response to the input temperature. A battery and voltage divider might be able to be used to improvise the voltage output at a particular level to convert the infant warmer to manual mode.
20	Replace probe or improvise thermister	If the probe is a thermister, it works by providing a resistance that varies in response to the input temperature. A potentiometer or resistor might be able to be used to improvise the resistance at a particular level to convert the infant warmer to manual mode.
21	Does warmer maintain temp within 1 degree C?	If the probe is present, test the temperature output at various temperature levels to ensure the device can maintain the selected temperature within 1 degree C.
22	Replace or correct probe.	If the device does not maintain a temperature close to the input, the probe must be replaced or corrected.
23	Go to begin.	Begin the diagnostic process again to determine if corrective measures have repaired the device.
24	Go to begin.	Begin the diagnostic process again to determine if corrective measures have repaired the device.

25	Infant warmer is working properly.	The infant warmer maintains the appropriate temperature. The repair was successful.
26	Is temperature between 34 and 40 degrees?	Does the warmer maintain an appropriate temperature (between 34 and 40 degrees C) when operating in manual mode (without a temperature probe)?