IPC Recommendations for the MedicAir 2.0 Air Purifier

1. The HEPA 13 filter lasts for 4,320 hours i.e., if used 24/7, it will need to be changed every 6 months. The filter's lifetime is displayed on the monitor. The HEPA13 filter removes up to 99.95% of microparticles larger than 0.21 μm.
2. The UV lamp should be replaced together with the filter – request the assistance of the Energy Services Division for this step.
3. Whenever the air purifier is opened for maintenance, appropriate personal protective equipment should be worn – use contact precautions as well as airborne precautions i.e., disposable gloves, gown and N95 mask. Wearing goggles or a face shield is also recommended.
4. Whenever in use, ensure that the UV lamp is turned on. Its sterilization rate is 99.99%.
5. Place the apparatus close to the source of the infection (which is usually the patient's mouth and nose) and preferably more than 20cm from the wall, for maximum efficiency. In addition, all outlets like doors and windows should be closed during use.
6. The apparatus should be kept on a flat surface or else it will automatically turn off.
7. Ensure the apparatus is switched off before changing the filter and lamp since UV light can represent a danger to humans.
8. The external surface of the air purifier should be cleaned with 70% alcohol once a day. Do not use hypochlorite solution.
9. If the air is presumed to be contaminated, turn the air purifier on for 15 minutes before taking a patient inside the room. The air monitor should preferably display an air quality of 'green' before a patient is allowed into the room.
10. The laser particulate sensor detects particles of size 0.1-0.3μm – however, some viruses can be smaller in size (e.g., 0.02μm) i.e., do not rely on the monitor's display of air quality to assume that the ambient air is microbe free.
11. One air purifier adjusted at peak setting (i.e., a flow rate of $605m^3/h$) should be used in a room with a maximum volume of $50m^3$ to achieve 12 air changes per hour (ACH).
    a. Set the apparatus to speed 1 ($180m^3/h$) in a room of volume $15m^3$.
    b. Use speed 2 ($360m^3/h$) in a room of volume $30m^3$.
    c. Adjust to speed 3 ($500m^3/h$) in a room of volume $40m^3$.
12. Such air purifiers should be used in areas with less than 12 ACH where:
    a. Patients with airborne disease are present e.g., with tuberculosis, chickenpox or measles.
    b. Patients with infections that are transmitted via droplets (e.g., influenza and SARS-CoV-2) are present during aerosol generating procedures (e.g., suctioning, bronchoscopy and intubation).
    c. Patients who need extra clean air are present (e.g., critically neutropenic patients after chemotherapy, transplant patients and operating theaters where implants are being inserted).
    d. The air quality is less than acceptable for the type of procedures being performed (see ISO Cleanroom Standards for details).

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