Air Purifiers QRG

Air Purifiers Distribution and Maintenance – QRG

What are Air Purifiers?

- Air Purifiers are portable air filtration devices that remove particles from the air.
- They use a fan to draw in air which passes through a HEPA (high-efficiency particulate air) filter that traps very small particles.
- Air Purifiers are very effective. They can clear a small smoke-filled room of aerosolised particles within 10 minutes.
- The unit types in the fleet are shown below:

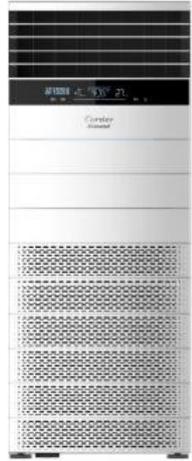| Types of Air Purifier Units – shown in increasing order of capacity					
Breville 158	Samsung 40T	Breville 508	BlueAir 7470i	Samsung 60T	InovaAir E20
BlueAir 3610	BlueAir 7770i	Samsung 90T	InovaAir E300	Carrier CLK	

Why are we using Air Purifiers?

- Western Health has several different mechanical air (Heating, Ventilation, Air Conditioning - HVAC) system designs, of varying age and condition. HVAC Systems were generally designed for comfort and efficiency rather than infection prevention and control (IPC).
- WH has conducted extensive air exchange surveys of all COVID, sCOVID wards and other transmission risk areas to ensure HVAC systems airflows are optimised.
- In some areas, due to the age and design of the HVAC systems, Air Purifiers are issued as a permanent deployment, as an additional safety measure for IPC. They are one of many IPC measures to mitigate risks, along with correct PPE and hand hygiene practices physical distancing, etc.

Note: Air Purifiers are NOT required for patients in negative pressure rooms. These rooms and tools are designed specifically for infection prevention and control.

They are to be deployed and used in conjunction with McMonty Hoods, especially where COVID patient cohorting is in place.

Air Purifiers in Designated COVID / sCOVID Streaming Wards

- As part of the WH readiness process to sign off of wards as designated COVID and sCOVID wards, Air Purifiers have been deployed to rooms/areas where there may be a HVAC system shortfall. The unit tops up the air performance in that room to a required minimal rate of air changes per hour (ACH). The units are matched to specific rooms according to their hourly filtration capacity.
- This type of Air Purifier deployment to a location is referred to as **'by room'**. The unit, or one like it, stays in its designated deployed location, until there is a change in that room's air performance, which will be verified by ACH survey (coordinated by Engineering).
- Ward staff should **not move, switch off, or tamper with** any unit.
- AHAs should not request any Ward staff to move any unit that is deployed **by room**.
- The **by room deployment** includes locations such as nurse stations, certain corridors and staff break rooms in COVID transmission risk areas.
  - This also includes all deployments to ED, ICU, Dialysis, and other shared patient areas, as risk-assessed by the IPC and APF Committee.
- If an Air Purifier in a room needs attention from Engineering Services, Ward Staff shall log a BEIMS request describing the issue, ward, room, and a unit description, stating the unit brand as indicated on the unit. Use the common task/fault 'AIRHEPA'.
- As the Air Purifiers pool continues to grow, IPC and APF determine the **next priorities for by-room deployments**, based on clinical and transmission risk to patients.
  - Priority areas will include shared patient areas such as waiting rooms, Medical Imaging, gyms, day oncology, and 4 bed rooms.

- All staff should note that office areas are **not prioritised over clinical treatment** areas, unless a transmission-response deployment is in place.
- **The APF shall regularly conduct audits of unit locations and reconcile against the master deployment tracker.** Units found in locations will be collected and returned to the pool.

Processes to request an Air Purifier – for a Patient

- The Western Health Infection Prevention and Control (IPC) Department, working together with Engineering, is responsible for ensuring that the Air Purifier fleet is allocated based on highest need.
- Western Health currently owns approximately 800 Air Purifiers, most of which are allocated to specific areas (by room).
- In designated streaming wards, units are fully deployed to their permanent positions and these rooms can be used with confidence to support COVID/sCOVID patients.
- There are also several Air Purifiers located on each site to support COVID/sCOVID patients who cannot be cared for in a COVID/sCOVID ward – these units form the Air Purifier Pool.
- This type of Air Purifier deployment is referred to as '**by patient**' – the unit is issued to the patient's room and bed, until either
    - a) the patient is discharged/transferred, or
    - b) patient test results confirm that there is no longer a COVID/sCOVID risk – in which case the Air Purifier returns to the pool.
- To access the Air Purifier Pool for a '**by patient**' deployment, follow these steps:

During business hours: Monday – Friday 8am – 4pm

- The Bed Manager allocates a COVID/sCOVID patient to a bed in a non-designated COVID streaming ward.
- If an Air Purifier is required, receiving Ward Staff to contact the relevant IP site team to authorize deployment of a pool Air Purifier 'by-patient'. The IPC approval email goes to WHS-Airpurifiers@wh.org.au containing the name of the IPC approver, date, patient, bed number, room and ward.
- The receiving Ward staff logs a BEIMS request containing all of the 'by patient' deployment information, including **IPC approver name and date of approval**.
- In Engineering Services, the BEIMS is allocated to an Air Purifier Facilitator (APF) in the Air Purifiers Team.
- The APF deploys an Air Purifier unit to the room and updates a master tracker of unit location, date, room, asset number and COVID/ sCOVID status.
- IPC and receiving Ward Staff can also use the WHS-Airpurifiers@wh.org.au mailbox address during business hours, to alert the APF team of the incoming BEIMS or to send a query.

- When the **'by patient'** Air Purifier status changes (patient is discharged, transferred to an isolation room or issued a McMonty Hood, or results have removed the risk), **the unit needs to be returned to the pool immediately**.
  - o The APF will conduct regular checks of the deployments, and coordinate collection of units that should be returned to the pool.
- Upon completion of use, Ward Staff must wipe the unit clean and place in their equipment store, with a green tag to indicate 'I Am Clean' in accordance with OP-GC5 Cleaning of Patient Care Equipment.
- Ward Staff shall log a BEIMS request to Engineering Services (ES) to request that the unit is collected from the ward equipment store and returned to the pool. Use the task 'AIRHEPA' in the menu to request this.

AIRHEPA   Air Purifiers and Monty Hoods Deployment Collection and Maintenance

- If any technical issues with the unit have been noted, these should be described in the BEIMS request.

After hours: Monday – Friday after 4pm, Weekends and Public Holidays

- The Bed Manager allocates a COVID/sCOVID patient to a bed in a non-designated COVID streaming ward, and notifies the receiving Ward Staff.
- The receiving Ward staff lodges a BEIMS request to Engineering Services (ES) recording the bed, room number and ward of the overnight deployment '**by patient**'. This provides the after-hours record of the Air Purifier deployment.
- The Bed Manager notifies the PSA Pool via phone call stating details of ward and room/bed number where an Air Purifier is to be deployed '**by patient**'. This is the Bed Manager's authorisation for a PSA to collect and deploy the unit.
- PSA Pool staff member collects a unit from the PPE store room and signs out the unit to the Ward using the sign out sheet, recording the **yellow WH asset number, date, time and ward.** (Note: A low bed trolley is required to collect the unit).
- PSA Pool staff delivers the Air Purifier unit into required room and powers it on.
- Before the patient is admitted into the room, the Ward Nursing staff verify that the Air Purifier is operational.
- The following business day, the APF checks the after-hours installation is correct, confirms asset numbers, updates the Air Purifier master tracker and reconciles the BEIMS requests.
- If no BEIMS request exists, the APF will ask the receiving ward to confirm details and create a BEIMS record.
- Air Purifiers should not be returned to the pool until business hours resume.
  - o If removal from a ward is required after hours, a BEIMS must be logged by the AHA or Ward Staff to record the movement.
- Ward Staff must wipe the unit clean and place in their equipment store, with a green tag to indicate 'I Am Clean' in accordance with OP-GC5 Cleaning of Patient Care Equipment.

Transmission Response deployments

- If work area – staff, office or clinical – has experienced a COVID transmission event, IPC may request a **transmission response** type of deployment.
- IPC will work with the APF Team to determine the unit type, quantity and duration required to meet this need.
- IPC or the Contact Tracing Team Leader will log the BEIMS to confirm this deployment with APF in business hours
- The APF Team will confirm with IPC before collecting the units after two weeks, and returning them to the pool.

Installation guide for Ward Staff

- Ensure the Air Purifier is placed in the room somewhere close to the patient's head if possible, and ideally out of the way of staff movements.
- Ensure the unit is plugged into a power point with the cord secured to the wall or ground in a location that minimises risk of tripping.
- Ensure at least 60cm clear space from each side and 25cm at the front.
- Ensure that the windows and doors are kept closed when in use.
- Ensure the unit is operating – air flow should be felt emanating from the unit vents.
- If unit is not running: Press the power button on the unit. The air purifier turns on and automatically begins operation. Some have a notification sound when they are powered up.
- Some units have the power switch on the back, but most are on the top.
- The fan speed can be adjusted to Low, Med, High or Auto. The unit will work best if set to high.
- In Auto mode, the fan speed will adjust depending on the levels of particles detected in the air.
- The unit will start on the last fan speed setting used.
- If the unit loses power (by a brief power outage) it will need to be manually restarted by Ward Staff.
- See this video: Air Purifier Tips For Western Health - YouTube

Air Purifier Allocations – Other WH areas

- The WH Air Purifier fleet is currently fully allocated.
- As new units are received, these are being deployed to areas as assessed as highest need by Engineering and IPC. As a guide, these units will be now be allocated to Patient rooms, Ward Corridors, High Risk Clinical areas (as identified by IP) and Staff Tea Rooms.
- Please do not submit general requests for Air Purifiers to Engineering. There is no need to lodge a request, unless a sCOVID or COVID patient is being cared for outside of a

streaming ward (in which case, the BEIMS needs to include name and date of IPC approval).

What do the LED indicators mean?

Monitoring particulate matter – for information only
- Some types of Air Purifiers are fitted with an indicator to monitor the amount of particulate matter in the air. It shows the different levels for each of the particle size. It sits on 10µm in normal operation. You can scroll through to see the other values:
- PM10 – Particles with a diameter of 10µm or less (1/5 of the diameter of a human hair)
- PM2.5 – Particles with a diameter of 2.5µm or less (1/20 of the diameter of a human hair)
- PM1.0 – Particles with a diameter of 1.0µm or less (1/50 of the diameter of a human hair)
- *Diameter of a human hair- 50 to 70 µm

Air Quality Levels

This is for information only
- The air quality is indicated by a coloured LED on the display unit. This will give a visual indication of the condition of the room and how hard the unit is working to filter the air.

Commissioning and Maintenance of Air Purifiers - Ward

- Between use 'by patient', Air Purifiers must be cleaned between patient usage and "green tagged" as per hospital procedure OP-GC5 Cleaning of Patient Care Equipment.
- All other Maintenance is managed by Engineering Services and must be requested via a BEIMS.

Commissioning and Maintenance of Air Purifiers – Engineering Services

- Air Purifiers are equipment that forms part of the WH HVAC system. Engineering Services is accountable to assess, procure, commission, maintain and track the fleet.
- Engineering Services assesses the existing HVAC systems' condition and performance and in conjunction with IPC, determines the numbers and types of Air Purifiers for each room/area.
- All Air Purifiers require electrical testing and tagging (EST) prior to use and an annual maintenance check. This is the responsibility of Engineering Services (ES). The units are to be assembled, cleaned tested and tagged prior to first use.
- The management and maintenance of the HEPA filter in the Air Purifier units is the responsibility of Engineering Services.
- At times the unit pre-filter may need a clean to remove dust. This requires a BEIMS request.

- Each device is assigned a designated unique WH asset number. A yellow asset label is applied to each unit to enable asset lifecycle management.