

SOP for decontaminating Police cars during COVID-19 pandemic

Acronyms

COVID-19	Severe Acute Respiratory Syndrome Coronavirus
H ₂ O ₂	Hydrogen Peroxide
PAPR	Powered Air-purifying Respirator
PPE	Personal Protective Equipment
PUI	Patient Under Investigation
SARS	Severe Acute Respiratory Syndrome
UCM	University of California, Merced
USDOT	United States Department of Transportation
VHP	Vaporized Hydrogen Peroxide

Purpose and Scope

1. Decontamination of Public Safety vehicles after transporting suspected PUIs
2. Set up Bioquell BQ 50 and aerator systems inside vehicle
3. Air-tight sealing of vehicle

Supplies

1. Bioquell unit
 - BQ 50 Vaporizer unit
 - BQ 50 aeration unit
 - BQ 50 hard cases control panel
 - Drager Xam 5100
 - H₂O₂- 950 ml bottle (Part no. CNS-BQ783U1000BQ50)
 - Biological Indicator- (6 log, Part no. TD078-1000-20)
 - Chemical Indicator (HPV-CI, Part no. TD078-5000-20)
 - PVC Tape (Part no. U-Bioquell PVC Tape)
 - Tryptic Soy Broth (Part no. U-Fis-BB21093-TSB-8m)
2. Tubes
3. Extension cables
4. Flat non-absorbent platform

Pre-decontamination requirements-

1. Wash the vehicle
2. Remove any chemical sensitive attachment/accessory from the car

PPE Requirement

1. Tyvek suit
2. N-95 respirator or PAPR
3. Nitrile glove
4. Face shield
5. Goggle
6. Shoe cover

Training Requirement:

1. Biosafety
2. Bloodborne Pathogens
3. Hazmat Spill Response and DOT Awareness

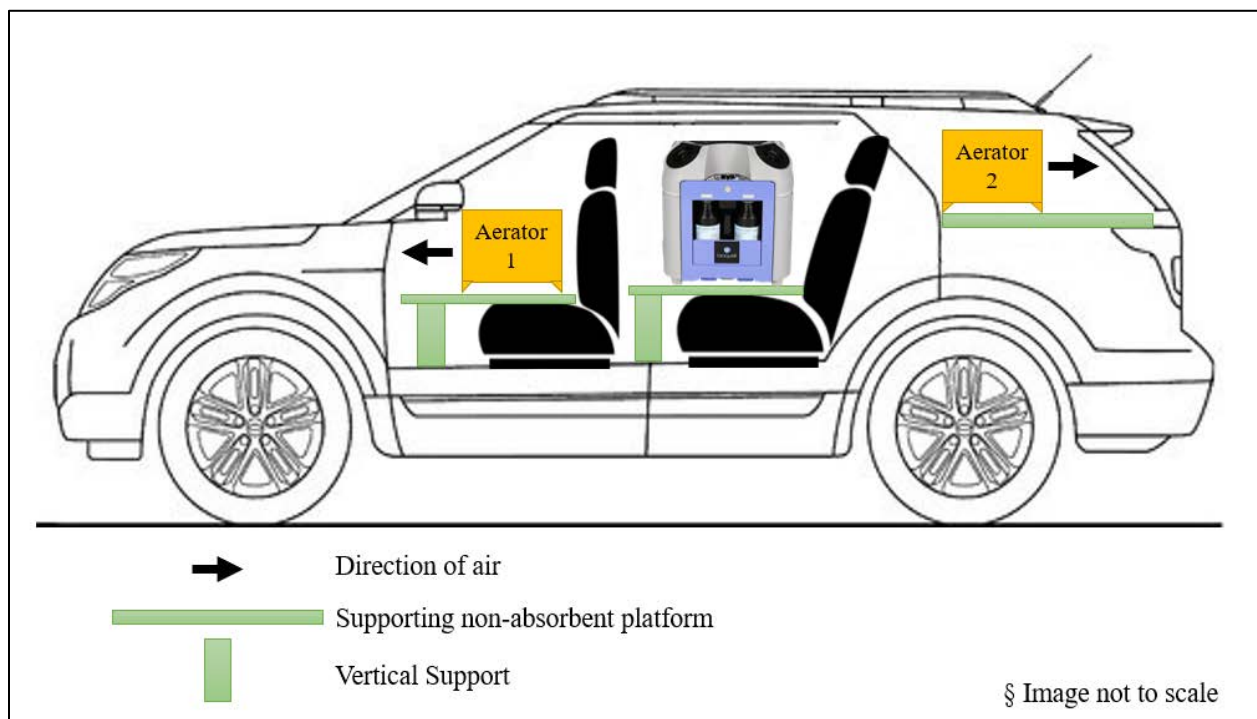


Fig. 1: Schematic diagram of Bioquell set up in public safety vehicle

Note: The whole procedure must be performed either by biosafety officers or by any trained professional under supervision of EH&S personnel.

Setting up Bioquell system inside a vehicle:

- **Setting up Bioquell BQ 50**

1. The central vaporizer unit should be placed on the rear passenger seat
2. The unit must be placed on a platform that is not susceptible to vapor absorption
3. A minimum distance (ideally >5mm) should be maintained between the surface of the seat and the platform to make sure that the platform does not create any dead zone
4. Additional support should be provided to ensure the stability of the platform

- **Setting up Bioquell aerator unit**

1. One of the aerator unit will be placed in the front portion of the car
2. The other aerator unit will be placed in the trunk area
3. The arrow mark of the front and back aerator unit should be directed outward from the BQ 50 unit (as shown in the diagram)

Sealing of vehicle:

Sealing is the most important factor of the whole operation. If optimum sealing is not reached, the efficacy of the whole procedure will not be achieved.

- All the door and glass linings must be taped by the Bioquell gas impermeable tape.
- The front and side opening of engine hood need to be taped.
- The front air intake portion which feeds the air condition line must be taped.
- The front and rear glass linings must be taped.

Note: The use of ordinary tape may not stop gas to permeate through its material.

Power supply:

Two different power lines will be required for this operation-

- **Power line 1:** It will provide electricity support to the central Bioquell BQ 50 unit
- **Power line 2:** This power line will distribute power to the aerators.

Note: All power lines and strips must be surge protected and durable enough to provide support for at least 4-5 hours.

Placing Biological and Chemical Indicator

- The biological and chemical indicator strips should be taped inside the front and back window
- A minimum of two biological and chemical indicators should be placed inside the vehicle.

- The strips should be placed approximately leaving equal distance from each other.

Other considerations

Any object that may stand as an obstacle to VHP must be removed, for e.g.,

- The head rests should be removed from the seats
- Seat, steering wheel or shifting stick covers, if any, should be removed.
- Stowage should be kept open.

Note: All removed parts should be left inside the car

Post Decon Actions:

After the decon cycle is completed, the following steps should be followed -

- Remove taping while constantly monitoring the concentration of residual H₂O₂ by using Drager Xam 5100.
- Aseptically collect the biological indicators and dip them individual TSB tube which should be opened inside the vehicle.
- Incubate the TSB tubes at room temperature for 4-5 days.
- Open the doors of the vehicle to ensure appropriate aeration.

Note: The TSB tubes must be sterilized outside of the vehicle by spraying 70% ethanol/10% bleach.

Appendix I

EMS Transport of a PUI or Patient with Confirmed COVID-19 to a Healthcare Facility (including interfacility transport)

If a patient with an exposure history and signs and symptoms suggestive of COVID-19 requires transport to a healthcare facility for further evaluation and management (subject to EMS medical direction), the following actions should occur during transport:

- EMS clinicians should notify the receiving healthcare facility that the patient has an exposure history and signs and symptoms suggestive of COVID-19 so that appropriate infection control precautions may be taken prior to patient arrival.
- Keep the patient separated from other people as much as possible.
- Family members and other contacts of patients with possible COVID-19 should **not** ride in the transport vehicle, if possible. If riding in the transport vehicle, they should wear a facemask.
- Isolate the ambulance driver from the patient compartment and keep pass-through doors and windows tightly shut.
- When possible, use vehicles that have isolated driver and patient compartments that can provide separate ventilation to each area.
 - Close the door/window between these compartments before bringing the patient on board.
 - During transport, vehicle ventilation in both compartments should be on non-recirculated mode to maximize air changes that reduce potentially infectious particles in the vehicle.
 - If the vehicle has a rear exhaust fan, use it to draw air away from the cab, toward the patient-care area, and out the back end of the vehicle.
 - Some vehicles are equipped with a supplemental recirculating ventilation unit that passes air through HEPA filters before returning it to the vehicle. Such a unit can be used to increase the number of air changes per hour (ACH)
- If a vehicle without an isolated driver compartment and ventilation must be used, open the outside air vents in the driver area and turn on the rear exhaust ventilation fans to the highest setting. This will create a negative pressure gradient in the patient area.
- Follow routine procedures for a transfer of the patient to the receiving healthcare facility (e.g., wheel the patient directly into an examination room).

Source: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-for-ems.html>