

# **BOP GUIDANCE ON AEROSOL GENERATING PROCEDURES (AGPs)**

**5/8/2020**

Since the emergence of the COVID-19 pandemic, much has been learned about the SARS-CoV-2 virus and its means of transmission. Its primary mode of spread appears to be through respiratory droplets that are expelled by an infected person from actions such as coughing or sneezing. These droplets are then inhaled by another person or spread from high touch surfaces onto another person when they touch the surface and then touch their eyes, nose or mouth. Another manner by which infective respiratory droplets are produced is with aerosol -generating -procedures (AGPs). Therefore, strong consideration must be taken to minimize the use of AGPs as much as possible to mitigate the risk of COVID-19 transmission. Some AGPs that may be utilized within a BOP institution include Continuous Positive Airway Pressure (CPAP), Bi-level Positive Airway Pressure (BiPAP), nebulizer treatments and pulmonary function testing (PFT). Institutions should retrieve a report from BEMR identifying inmates who have been issued a nebulizer or CPAP machine and follow the recommendations below:

## **GENERAL PRINCIPLES**

- Determine whether the AGP is medically necessary. The risk of the procedure given the current situation should be weighed against the risk of temporary discontinuation
- Consider any alternatives that may be available and feasible
- Educate and discuss with the patient the reasoning, including the risks and benefits, for the continued use or discontinuation of a particular AGP.
- If the procedure is deemed medically necessary, implement strategies to mitigate the risk of exposure to other inmates and staff

## **NEBULIZER TREATMENTS**

- Nebulizers are typically used in the setting of an acute exacerbation of chronic obstructive or restrictive pulmonary disease i.e. COPD or asthma. They should not be utilized for chronic baseline disease management.
- To the maximum extent possible, the use of a metered dose inhaler (MDI) should be used instead of a nebulizer. Even in the acute setting, the use of a MDI with a spacer has been shown to be at least as effective as a nebulizer when used correctly. Be aware that it may be necessary to use more doses per event or more frequent dosing than the baseline prescription for the medication.
- If a nebulizer must be used:
  - Administer the treatment in an airborne infection isolation (AII) room when possible. If not available, use a single room with a solid door
  - Attach an in-line viral filter (e.g. Airlife 001851) at the end of the 6 inch flex tube that extends from the nebulizer kit
  - Minimize number of staff involved in administering the nebulizer and the amount of time spent in the room.
  - When in the room, staff should use appropriate PPE to include: N95 mask, face shield or eye protection, gown and gloves
  - Room and equipment must be disinfected when finished

## CPAP/ BiPAP

- Most patients use a CPAP machine for sleep apnea. In most cases, it may be reasonable to consider that the risks of aerosolization of the SARS CoV-2 virus leading to transmission of the disease during a pandemic outweigh the risks of the short-term discontinuation of CPAP use.
- In cases where CPAP use is considered to be for mild to moderate sleep apnea with no significant co-morbidities, the CPAP machines should be retrieved from the patient until the risks of transmission at the institution in the setting of the COVID pandemic have abated.
- In patients with severe sleep apnea with co-morbidities such as morbid obesity, pulmonary hypertension, cardiomyopathy, etc., even the temporary discontinuation of BiPAP or CPAP may constitute a higher risk. When the decision is made to allow the patient to continue using CPAP/BiPAP, the following procedures should be considered for implementation in an effort to mitigate the spread of COVID-19:
  - If possible, these patients should be tested for COVID-19
    - Patients that test positive should be placed in isolation.
      - A contact investigation should be performed and any identified close contacts as well as inmates bunking nearby should be tested for COVID-19, have a symptom screen and temperature check, and placed in quarantine or isolation as indicated.
  - For patients that test negative, housing adjustments should be made as feasible. In order of preference:
    - They should be single celled with a solid door that closes. The door should be closed when BiPAP or CPAP is in use.
      - The door should be closed when BiPAP or CPAP is in use.
      - The [CPAP/BiPAP Sign](#) should be posted on the door to alert staff regarding necessary PPE if entering the room.
      - When in the room, staff should use appropriate PPE to include: N95 mask, face shield or eye protection, gown and gloves
      - Minimize number of staff and the amount of time spent in rooms where CPAP/BiPAP are in use.
      - Room and equipment must be disinfected prior to allowing a new patient to occupy a room previously used by a CPAP/BiPAP user.
      - If single cells are limited, prioritize use of these rooms to patients under quarantine.
    - Cohort CPAP wearers to one area of unit in a lower bunk
    - House them maximally distanced from others
  - CPAP/BiPAP must be set up and used with a full-face, non-vented CPAP mask with an in-line viral filter attached to the intake and exhalation ports. The viral filters should be changed daily. **See attached diagram for setup.**
  - If the recommended setup is not readily obtainable, the humidifier chamber should be removed from the device when possible or the device be used without humidification.
  - Minimize number of staff and the amount of time spent in rooms where CPAP/BiPAP are in use.

- When in the room, staff should use appropriate PPE to include: N95 mask, face shield or eye protection, gown and gloves
- As of the writing of this guidance, there are no special or increased cleaning recommendations for CPAP/ BiPAP equipment or machines. Patients should be reminded to perform their usual regularly scheduled daily and weekly cleaning regimens as recommended by the equipment manufacturers.
- Room and equipment must be disinfected prior to allowing a new patient to occupy a room previously used by a CPAP/BiPAP user.

## **PULMONARY FUNCTION TESTING/ PEAK FLOWS**

- The performance of PFTs and peak flow testing are generally not considered necessary in the acute setting and should be deferred until concerns of the pandemic have abated

## **SUPPLEMENTAL OXYGEN**

- Within BOP institutions, the use of supplemental oxygen is typically low flow via the use of nasal cannula. This is not considered to be an AGP and should not require specific precautions.
- Use of high flow oxygen, humidified trach masks or non-rebreathers **do** involve AGPs and their use should be performed with the same precautions and measures as with the use of CPAP/ BiPAP above

## **REFERENCES**

Adapted from California Correctional Health Care Services Memorandum: Aerosol-Generating Procedures (AGPs); April 8, 2020

Tran, K., Cimon, K., Severn, M., Pessoa-Silva, C. L., & Conly, J. (2012, April 26). *PLoS One* 2012; 7(4): e35797. Retrieved April 2020, from NCBI: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3338532/>  
<https://www.embeds.co.uk/wp-content/uploads/2020/03/advice-on-acute-niv-technical-aspects-final-16-march-2020.pdf>

Guidance regarding coronavirus (COVID-19) and Obstructive Sleep Apnea (OSA): for people who routinely use continuous positive airway pressure (CPAP), their families and health care workers, 20 March 2020; British Thoracic Society; <https://brit-thoracic.org.uk/about-us/covid-19-information-for-the-respiratory-community/>

Switch to a non-vented full face mask  
(Resmed Non vented full face mask – Small #61739, Med #61740, Lge #61741)  
covers mouth and nose and has no holes in the mask or elbow attachment on  
the mask.



From the elbow on the mask, attach a swivel connector (Respironics - #7041).



From there, attach a viral filter (Airlife - #001851).



From the viral filter, attach an exhalation port (Respironics - #312149).



The remainder of the CPAP set-up is unchanged!



# **BOP GUIDANCE ON AEROSOL GENERATING PROCEDURES (AGPs)**

**5/11/2020**

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***Please note: dental procedures are not addressed in this document. Please refer to additional information on dental procedures located on the Sallyport COVID-19 page under the Health Care Provider Guidance Section.***

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