
Prevention of Hospital-Acquired & Ventilator-Acquired Pneumonia

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Evidence Based Practices to Reduce HAP and VAP

- Utilize Oral Care Guidelines
- Maintain regular hand washing
- Use protective gowns, eyewear, and gloves
- Avoid large gastric volumes
- Keep head of bed elevated >30 degrees

Evidence Based Practices to Reduce HAP and VAP

- Avoid prolonged nasal intubation
- Prevent self-extubation
- Monitor and remove condensate accumulation
- Administer vaccines
- Provide continuous subglottic suctioning
- Check pressure of ETT cuff regularly
- Record daily weaning parameters

Oral Care Guidelines

- Assess mouth on admission and q shift
- Brush teeth q12 hrs with NaHCO₃ toothpaste
- After brushing, rinse mouth with 1/2 strength H₂O₂ on foam swabs; suction mouth
- Swab mouth q2 hrs using 1/2 strength H₂O₂ on foam swabs
- Suction back of throat q2 hrs and prn
- Moisturize mouth and lips with water soluble moisturizer (Holland, 2003)



Sage Products, 2003

Oral Care Fights off Bacteria!



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Interrupt Person-to-Person Transmission

- Wash Hands
- Wash Hands
- Wash Hands

Interrupt Person-to-Person Transmission

- Wash Hands
 - *before* and *after* contact with patient or device
 - whether or not gloves are worn







STERIS

Gel Sani
Hand Sanitizer
Kills Germs
Prevents Infection
Non-Aerosolizing
Non-Drying
Non-Toxic
Non-Irritating



Interrupt Person-to-Person Transmission

Barrier precautions

- Wear gloves when handling devices
 - *No recommendation whether sterile vs. clean gloves required*
- Wear gown when soiling by respiratory secretions is anticipated



Avoid Large Gastric Volumes

- Check gastric residuals q 4 hrs or as ordered
- Discard or reinstill aspirate according to Adult Enteral Nutrition Order Form
- If Adult Enteral Nutrition Order Form not completed, follow these guidelines:
 - If residual volume <100-150 ml, reinstill aspirate
 - If residual volume >100-150 ml with continuous TF or half the volume of previous intermittent TF, consult MD
(Mims et al., 1996. Critical Care Skills.)
- Use agents to increase GI motility
- Consider providing enteral nutrition through a small bore feeding tube placed in small bowel
- Reduce use of narcotics and anticholinergic agents

Positioning for Ventilated Patients

Easiest intervention staff can do to prevent pneumonia is to:

- Maintain HOB > 30 degrees

Why?

- Decreases risk of aspiration

Postural Changes

- Patients on bedrest have increased risk of pneumonia
- Turn patients q 2 hrs if unable to turn selves
- Keep HOB at least 30 degrees if on vent or if receiving tube feeds



Prevent Self-Extubation

Strategies to prevent self-extubation include:

- Utilizing chemical and/or physical restraints when appropriate
- Ensuring ETT properly secured to patient

Self-extubation increases:

- Risk for aspiration of pooled oral secretions above the cuff
- Trauma to mucous membranes

Avoid Prolonged Nasal Intubation

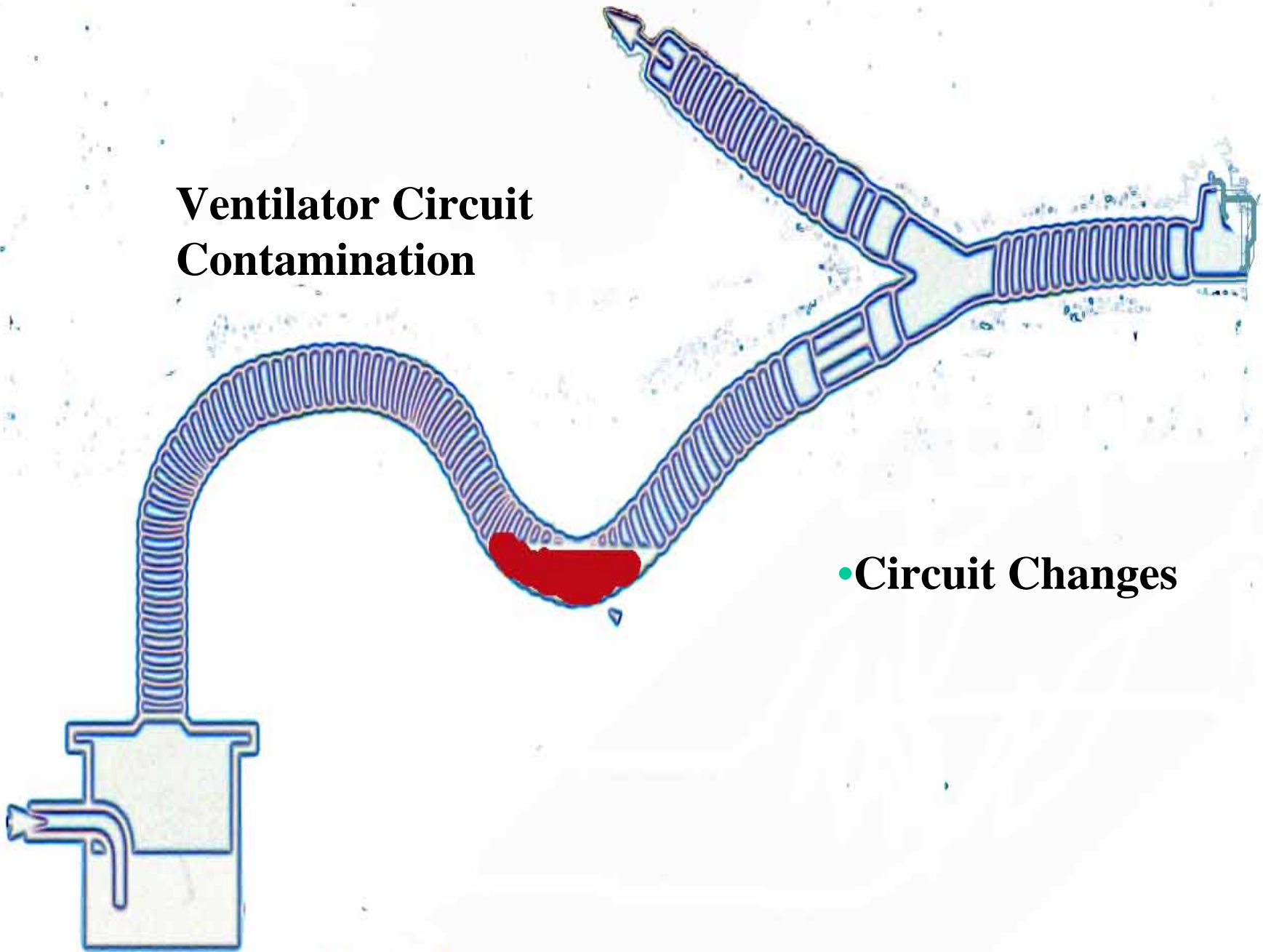
- Avoid nosocomial sinusitis through aspiration of infected secretions from nasal sinuses
- Communicate with healthcare team about the length of time nasal ETT has been in place
- Discuss alternative options with healthcare team after nasal ETT has been in place for > 24 hours

Monitoring & Removal of Condensate Accumulation

- Remove condensate from ventilator tubing to prevent tubing from acting as a reservoir for nosocomial pathogens
- Use the Heat Moisture Exchanger (HME) in place of heated water to humidify air
- Change HME q 24 hrs and prn (done by RT)

(Heat and Moisturizer Exchanger Policy; Respiratory Care Services Policy Manual)

Ventilator Circuit Contamination



• Circuit Changes

Monitor ETT Cuff Pressures

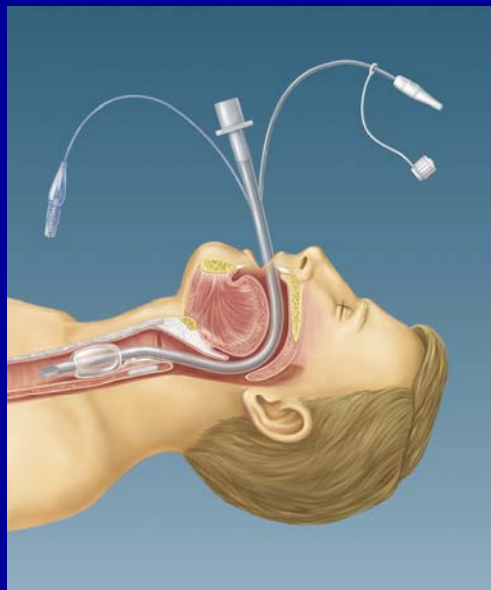
- Ensure adequate cuff pressure to prevent leakage of secretions into lower airway
- Check ETT cuff pressure q 12 hrs and prn; normal cuff pressure 15-25 cm H₂O (done by RT)

(Cuff Pressures Policy; Respiratory Care Services Policy Manual)

Continuous Subglottic Suctioning

What is it?

- Specialized ETT with a separate dorsal lumen above the cuff to suction pooled secretions from subglottic space. Not currently used at MUSC.
- Used to suction pooled secretions above inflated ETT cuff which may contain aspirated material and lead to VAP
- \$\$\$



Interruption of Transmission of Microorganisms

- **Interruption of person-to-person transmission of bacteria**
- **Sterilization or disinfection, and maintenance of equipment and devices**

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Administration of Vaccines

- Pneumonia & influenza vaccination programs lower rates of pneumonia caused by specific pathogens
- Assess all patients for vaccines on admission
- Encourage MD to consider administration of vaccine prior to discharge to lower risk for pneumonia in future



Bacteria Entering the Oral Cavity



Sage Products, 2003

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