vSNF Workgroup | Workshop #7

Preventing Respiratory Infections in Ventilated Residents

August 10, 2022

Healthcare-Associated Infections Program
Center for Health Care Quality
California Department of Public Health

Housekeeping Reminders

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To comment, you can unmute or type into the Chat

Agenda

12-12:05PM	Welcome
12:05-1PM	Preventing Respiratory Infections in Ventilated Residents
1-1:25PM	Activity and Discussion
1:25-1:30PM	Next Steps

Healthcare-Associated Infections Program Adherence Monitoring

Ventilator Associated Pneumonia (VAP) Prevention

Assessment completed by:
Date:
Unit:

Regular monitoring with feedback of results to staff can maintain or improve adherence to (VAP) precautions practices. Use this tool to identify gaps and opportunities for improvement. Monitoring may be performed in any type of patient care location where patients are mechanically ventilated.

Instructions: Observe 3-4 patients/residents on a ventilator. Observe each practice and check a box if adherent, Yes or No. In the column on the right, record the total number of "Yes" for adherent practices observed and the total number of observations ("Yes" + "No"). Calculate adherence percentage in the last row.

Ventilator Associated Pneumonia Prevention Observations **Identify observed staff as nursing (NSG) or respiratory therapy (RT)** →	Resident 1		Resident 2		Resident 3		Resident 4		Adherence by Task	
	☐ NSG	☐ RT	☐ NSG	☐ RT	☐ NSG	☐ RT	☐ NSG	☐ RT	#Yes	# Obs
1) Head of bed 30-45 degrees	Yes	No	Yes	No	Yes	No	Yes	No		
2) If tracheostomy or ETT: are ties clean and secure?	Yes	No	Yes	No	Yes	No	Yes	No		
3) Oral suction equipment stored in a clean area (not on floor or bed)	Yes	No	Yes	No	Yes	No	Yes	No		
4) Oral care with an antiseptic agent (per policy) chart review	Yes	No	Yes	No	Yes	No	Yes	No		
5) Hand hygiene & gloves donned before providing care	Yes	No	Yes	No	Yes	No	Yes	No		
6) After care, gloves removed/hand hygiene done before next task	Yes	No	Yes	No	Yes	No	Yes	No		
7) Sterile water used to rinse reusable respiratory equipment	Yes	No	Yes	No	Yes	No	Yes	No		
8) Condensate in ventilatory circuit is removed **AND** tubing is below mouth to keep condensate from draining into patient	Yes	No	Yes	No	Yes	No	Yes	No		
9) Intubation kits appropriately stored in a clean area	Yes	No	Yes	No	Yes	No	Yes	No		
10) Clean and dirty Resp. equipment stored in separate areas	Yes	No	Yes	No	Yes	No	Yes	No		

# of Correct Practices Observed ("# Yes"): _____

Total # Ventilator Observations ("# Observed"): ____
(Up to 40 total)
If practice could not be observed (i.e. cell is blank), do not count in total # Observed.

Adherence ____%
(Total "# Yes" ÷ Total "# Observed" x 100)

Healthcare-Associated Infections Program Adherence Monitoring
Hand Hygiene

Assessment completed by:
Date:
Unit:

Regular monitoring with feedback of results to staff can improve hand hygiene adherence. Use this tool to identify gaps and opportunities for improvement. Monitoring may be performed in any type of patient care location.

Instructions: Observe at least 10 hand hygiene (HH) opportunities per unit. Observe a staff member and record his/her discipline. Check the type of hand hygiene opportunity you are observing. Indicate if HH was performed. Record the total number of successful HH opportunities and calculate adherence.

HH Opportunity	Discipline	What type of HH opportunity was observed? (select/ ☑ 1 per line)	Was HH performed for opportunity observed? ✓ or Ø
Example	N	☐ before care/entering room* ☐ before task ☐ after body fluids ☐ after care* ☑ upon leaving room *Remember: Hand hygiene should be performed before and after glove use	✓
HH1.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH2.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH3.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH4.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH5.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH6.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH7.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH8.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH9.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH10.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	

Disciplines:			**Opportunities:**
CNA = Nurse Assistant	**P** = Physician	**VOL** = Volunteer	✓ =Opportunity Successful
D = Dietary	**RT** = Respiratory Therapist	**W** = Social Worker	Ø= Missed Opportunity
N = Nurse	**S** = Student	**OTH** = Other, Specify	
	VIS = Visitor	**U** = Unknown	

For HH1-HH10:

Total # HH Successful ("# ✓ "): _____	Total # HH Opportunities Observed: _____	Adherence: _____% (Total # HH Successful ÷Total # HH Opportunities Observed x 100)

PREVENTING RESPIRATORY INFECTIONS

Implicit Bias

- Describes how our unconscious attitudes or judgements can influence our thoughts, decisions or actions
- Includes involuntary, unintentional perceptions made without awareness
- Occurs as our brains sort information and perceive data to understand our world
- Affects our decisions, contributing to societal disparities
  - Self awareness about implicit bias can promote healthcare diversity and equality
- Learn more about your own implicit bias at Project Implicit (implicit.harvard.edu/implicit/)

Objectives

- Discuss the epidemiology of pneumonia, including ventilator-associated pneumonia (VAP)
- Describe evidence-based pneumonia prevention practices
- Perform adherence monitoring of pneumonia prevention practices
- Review pneumonia prevention strategies

Healthcare-Associated Pneumonia

- Account for 15% of all healthcare-associated infections in acute care settings
  - 25% of medical ICU
  - Among patients with HAI pneumonia, mortality is as high as 33%

CDC/HICPAC Guidelines for Preventing Health-Care Associated Pneumonia, 2003
(www.cdc.gov/mmwr/preview/mmwrhtml/rr5303a1.htm)

Pneumonia in Skilled Nursing Facilities

- Second most common cause of infection in SNF
- Seasonal increase in pneumonia due to influenza
- 6-23% of SNF residents with pneumonia die

AHRQ Infection Prevention Resources
(ahrq.gov/hai/quality/tools/cauti-ltc/modules/resources/guides/infection-prevent.html)
SHEA/APIC Pneumonia Prevention Guideline (2014)

Common Healthcare-Acquired Pneumonia Pathogens

Proteus spp	*Klebsiella pneumoniae*
Acinetobacter spp*	*Escherichia coli*
Staphylococcus aureus, including methicillin-susceptible S *aureus* (MSSA) and methicillin-resistant S *aureus* (MRSA)	Non-Enterobacteriaceae bacteria+
Streptococcus pneumoniae and *Haemophilus influenzae* - recovered only in early-onset HAP	*Pseudomonas aeruginosa*

* *Acinetobacter* species commonly colonize respiratory tract secretions in patients in ICU.

- S. *marcescens, Stenotrophomonas maltophilia,* and *Acinetobacter* species are less common.
- Healthcare-associated pneumonia caused by *Acinetobacter* species or *B cepacia* may be associated with outbreaks
- Note: Influenza and viruses may also cause pneumonia; however, bacteria are the most common cause of pneumonia

CDC/HICPAC Guidelines for Preventing Health-Care Associated Pneumonia, 2003 (cdc.gov/mmwr/preview/mmwrhtml/rr5303a1.htm) Shetty, et. Al. (2021)

Influenza

- Severe illness may lead to life-threatening pneumonia
  - 400-5,000 influenza deaths annually in California
  - Elderly are at risk
    - Immune system not functioning as well
    - Ability to cough and deep breathe becomes impaired
  - Communal settings such as SNF lead to increased transmission
  - Prevention of influenza by respiratory etiquette, yearly influenza vaccination, hand hygiene
- Symptoms are like that of COVID-19 – <u>suspect BOTH</u>

Commonly Acquired Pneumonia Pathogens and Risk Factors in SNFs

Pathogen	Risk factors
Streptococcus pneumoniae *Haemophilus influenzae* *Klebsiella pneumoniae*	Most common pathogens
K. Pneumoniae *P. aeruginosa*	Repeat hospitalizations, invasive lines, intubation and mechanical ventilation
Staphylococcus aureus MRSA	Chronically ill, frequently hospitalized
Anaerobic: *Peptostreptococcus* *Bacteroides* *Provotella* species	Common in the oral-pharynx
Fungal organisms (e.g. *Candida* species)	Immunosuppressed persons

Stamm, D., Katta, S., Stankowicz, A., Nursing home acquired pneumonia, STATPearls, NCBI, (August 24, 2020)

Elderly SNF Residents at Risk for Pneumonia

- Decreased clearance of bacteria from the airways
  - Inhalation of aerosols containing bacteria
- Altered throat flora
- Poor functional status, immobility
- Presence of feeding tubes
- Swallowing difficulties and aspiration
  - Persons with abnormal swallowing
    - Depressed consciousness
      - Postoperative patients
  - Inadequate oral care
  - Hematogenous spread from a distant body site

Preventing Pneumonia in SNF

- Ensure adequate nutrition and hydration
  - Record food and fluid intake to ensure adequacy
  - For those able to eat, offer small snacks and fluid several times a day
- Provide daily oral care
  - Prevent bacteria from accumulating
  - Decreases risk of pneumonia if aspirated
- Elevate the head of the bed 30 to 45 degrees during tube feeding and for at least 1 hour after to reduce potential aspiration
- Perform hand hygiene after contact with respiratory secretions
- Use gloves for suctioning and cleaning respiratory equipment

CDC Guidelines for Preventing Health-Care-Associated Pneumonia, 2003
(cdc.gov/mmwr/preview/mmwrhtml/rr5303a1.htm)

Ventilator-Associated Pneumonia (VAP)

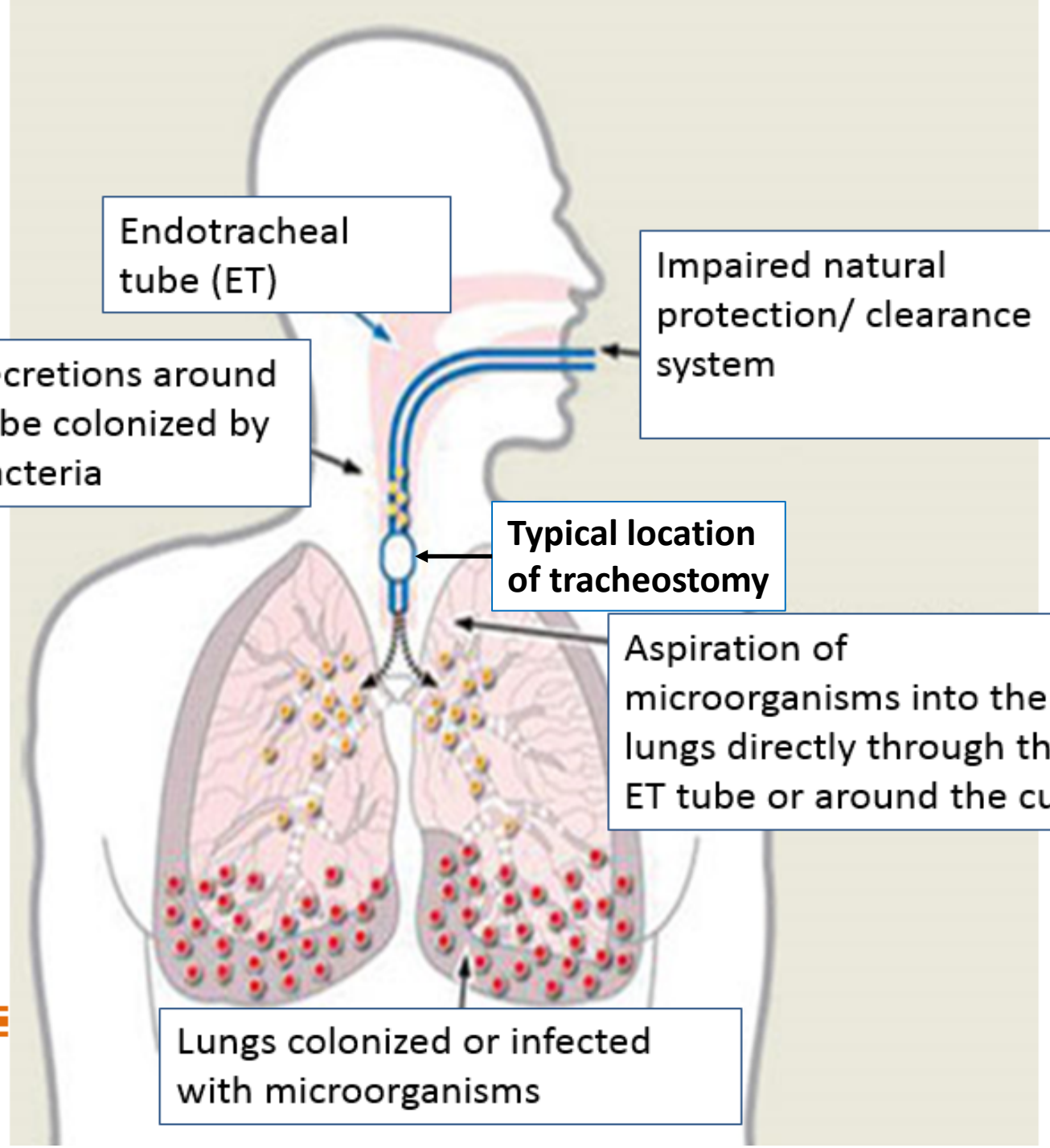
- Approximately 1200 SNFs in California:
  - 131 (10%) care for residents on mechanical ventilation
  - 3855 total SNF ventilator beds
- Residents may be on ventilator long term or for life
- Residents with an endotracheal tube directly into the respiratory tract at risk for VAP
- Up to 50% residents with VAP die
  - Highest mortality occurs in patients with severe illness and infection with non-fermentative gram-negative bacilli (examples, *Acinetobacter* and *Burkholderia* species)

Institute for Healthcare Improvement (IHI)
(ihi.org/resources/Pages/Tools/HowtoGuidePreventVAP.aspx)

Risks for Ventilator-Associated Pneumonia (VAP)

Non-Modifiable Risks	Modifiable Risks
Head trauma	Prevent aspiration of secretions
Coma	Reduce duration of ventilation
Nutritional deficiencies	Reduce colonization of GI and respiratory tract
Immune deficiency	Prevent exposure to contaminated equipment
Multisystem organ failure	Current smoker
Acidosis	
Co-morbidities such as diabetes, COPD, lung disease	
History of smoking	

VAP Pathogenesis



Etiology of Healthcare-Onset VAP

Early onset

- Occurs in first four days of hospitalization
- More likely associated with non-multidrug-resistant organisms such as *E. coli, Klebsiella spp., Proteus spp., S. pneumoniae, H. influenzae, and S. aureus*

Late onset

- Occurs five or more days into hospitalization
- More often associated with gram-negative bacilli, multidrug resistant Pseudomonas aeruginosa, MRSA, Acinetobacter spp

Guideline for the Prevention of Healthcare Associated Pneumonia, 2003 (PDF)
(cdc.gov/infectioncontrol/pdf/guidelines/healthcare-associated-pneumonia-H.pdf)

Risk Factors With Intubation

Endotracheal intubation is an independent risk factor with multiple associated factors such as:

- Micro aspiration around endotracheal tube
- Endotracheal intubation
- Prolonged duration of ventilation
- Abnormal swallowing function
- Secretions pooled above endotracheal tube

Reduce Duration of Ventilation

- Evaluate sedation, if in place, to improve mobility and weaning off ventilation
  - Sedation vacation means reducing or stopping medications that sedate, such as opiates or diazepam
- Assess readiness to wean from vent daily depending on the underlying diagnosis
- Conduct spontaneous breathing trials with provider input

May not be feasible for SNF residents on long-term ventilator support

Mobility and Lung Expansion

- Mobility increases lung capacity and lessens pooling of bacteria in the lower lung
- Even sitting at the side of the bed prevents pooling of secretions in the lung bases and allows for lung expansion
- Encourage early mobilization of residents with physical/occupational therapy

Prevent Aspiration of Secretions

- Maintain elevation of head of bed (HOB) 30-45 degrees
- Avoid unplanned extubation and re-intubation
  - Accidental dislodgement during care
  - Accidental Prevent resident from pulling at trach and tubing
- Manage oral secretions to prevent aspiration

A Word About Oral Care

- Oral antiseptics such as chlorhexidine hydrochloride (CHG) have begun to show resistance to bacteria in studies
- A complete oral care program includes cleaning, moisturizing, and using an antiseptic once a day
- Using CHG alone is not sufficient for through oral care, and can lead to resistance building

Cieplik, et al (2019)

Reduce Colonization of Airway and Digestive Tract - 1

- Use cuffed tracheostomy tube with inline suctioning
  - Minimizes secretions above cuff; reduces contamination of lower airway
  - Avoid overfilling the cuff, will cause permanent damage to the trachea
- Avoid acid suppressive therapy for patients not at high risk for stress ulcer or stress gastritis
  - Increases colonization of the digestive tract-the acidity of the stomach kills bacteria

Reduce Colonization of Airway and Digestive Tract - 2

- Reduce the opportunities to introduce pathogens into the airway
  - Perform good hand hygiene
  - Use gloves for contact with respiratory secretions or contaminated objects; follow with hand hygiene
  - Educate staff to avoid contaminating the tracheostomy from patient's mouth, HCP hands
  - Avoid introducing pathogens from patient's other body sites or the environment

Prevent Exposure to Contaminated Equipment

- Use sterile water to rinse reusable respiratory equipment
  - Using tap water has been tied to outbreaks of water-borne organisms such as *Mycobacteria*
- Remove condensate from ventilatory circuits
  - Use condensate collection devices
- Change ventilatory circuit only when malfunctioning or visibly soiled
- Store and disinfect respiratory equipment effectively
  - Avoid storing in places where the equipment can be contaminated

Facility's Role in Respiratory Infection Prevention

- Ensure policies reflect current recommended practices
  - CDC guidelines
- Ensure staff competency upon hire and at least annually
  - New hire orientation
  - Annual skills fair
  - Return demonstration to ensure competency
- Establish an adherence monitoring program for measuring prevention care practices
  - Use standardized tools to measure adherence
- Provide feedback to frontline staff and leaders
  - Present adherence results by unit, job role, shift

Ventilator Associated Pneumonia (VAP) Prevention Adherence Monitoring Tool

Healthcare-Associated Infections Program Adherence Monitoring
Ventilator Associated Pneumonia (VAP) Prevention

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# of Correct Practices Observed ("# Yes"): _____	**Total # Ventilator Observations ("# Observed"): ____ (Up to 40 total)** ***If practice could not be observed (i.e. cell is blank), do not count in total # Observed.***	**Adherence ____% (Total "# Yes" ÷ Total "# Observed" x 100)**

Elements of the VAP Adherence Monitoring Tool

1) Head of bed 30-45 degrees
2) If tracheostomy or ETT: are ties clean and secure?
3) Oral suction equipment stored in a clean area (not on floor or bed)
4) Oral care with an antiseptic agent (per policy) chart review
5) Hand hygiene & gloves donned before providing care
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7) Sterile water used to rinse reusable respiratory equipment
8) Condensate in ventilatory circuit is removed **AND** tubing is below mouth to keep condensate from draining into patient
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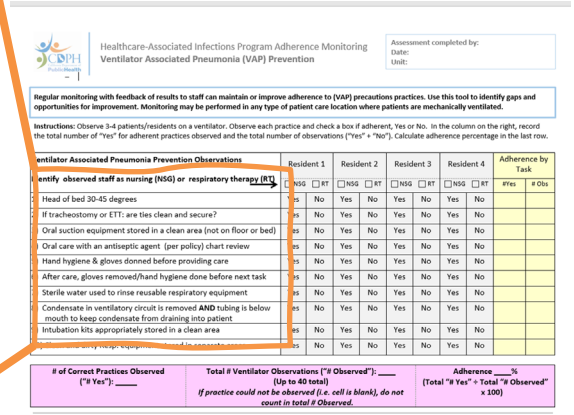
What elements we will we assess using the VAP Adherence Monitoring Tool?



Healthcare-Associated Infections Program Adherence Monitoring
Ventilator Associated Pneumonia (VAP) Prevention

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Hand hygiene & gloves donned before providing care	Yes	No	Yes	No	Yes	No	Yes	No		
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Sterile water used to rinse reusable respiratory equipment	Yes	No	Yes	No	Yes	No	Yes	No		
Condensate in ventilatory circuit is removed **AND** tubing is below mouth to keep condensate from draining into patient	Yes	No	Yes	No	Yes	No	Yes	No		
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[illegible]	Yes	No	Yes	No	Yes	No	Yes	No		

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Version 2021.10.29

California Department of PublicHealth

Ventilator Associated Pneumonia (VAP) Prevention Adherence Monitoring Tool (Example)

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Ventilator Associated Pneumonia (VAP) Prevention

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10) Clean and dirty Resp. equipment stored in separate areas	Yes	No	Yes	No	Yes	No	Yes	No	3	3

# of Correct Practices Observed ("# Yes"): 24	**Total # Ventilator Observations ("# Observed"):** 29 **(Up to 40 total)** ***If practice could not be observed (i.e. cell is blank), do not count in total # Observed.***	**Adherence** 83 **% (Total "# Yes" ÷ Total "# Observed" x 100)**

Version 2021.10.29

Preventing Pneumonia: The MOST Important Things

All Residents

- ❑ Promote resident and HCP influenza vaccination
- ❑ Promote pneumonia vaccination
- ❑ Ensure adequate nutrition and hydration
- ❑ Perform regular oral care
- ❑ Perform hand hygiene
- ❑ Ensure effective water management program
- ❑ Encourage early mobilization

Additional Practices for Residents on Mechanical Ventilation

- ❑ Maintain HOB 30-45 degrees
- ❑ Avoid gastric distention
- ❑ Assess readiness to wean
- ❑ Use cuffed ETT with inline suctioning
- ❑ Avoid acid suppressive therapy if possible
- ❑ Prevent exposure to contaminated equipment

You won't know if you don't monitor!

CASE SCENARIO

Case Scenario

Josie, the manager of your facility's subacute unit, called this morning. She is upset that Mr. Sandhu was transferred to the hospital last night due to complications from pneumonia. Mr. Sandhu is a long-time resident of the unit; he has several medical conditions requiring a tracheostomy and ventilator.

Josie is concerned that the staff may not be following all of the facility's ventilator care procedures, possibly contributing to Mr. Sandhu's pneumonia. She would like you to look into this incident and determine if there are any steps her staff can take to improve practice and prevent further cases of pneumonia.

After reviewing Mr. Sandhu's pneumonia, you determine his condition meets the criteria for a ventilator-associated, healthcare-acquired pneumonia (VAP). You can not determine an obvious cause of the VAP in this case. What can you do to prevent future cases of pneumonia?

A. Teach staff to turn ventilated residents every 6 hours
B. Perform ventilator pneumonia and hand hygiene adherence monitoring assessments
C. Ask Respiratory Therapist (RT) to determine what caused the VAP
D. Do nothing new; this VAP was an isolated incident

After reviewing Mr. Sandhu's pneumonia, you determine his pneumonia meets the criteria for a ventilator-associated, healthcare-acquired pneumonia (VAP). You can not determine an obvious cause of the VAP in this case. What can you do to prevent future cases of pneumonia?

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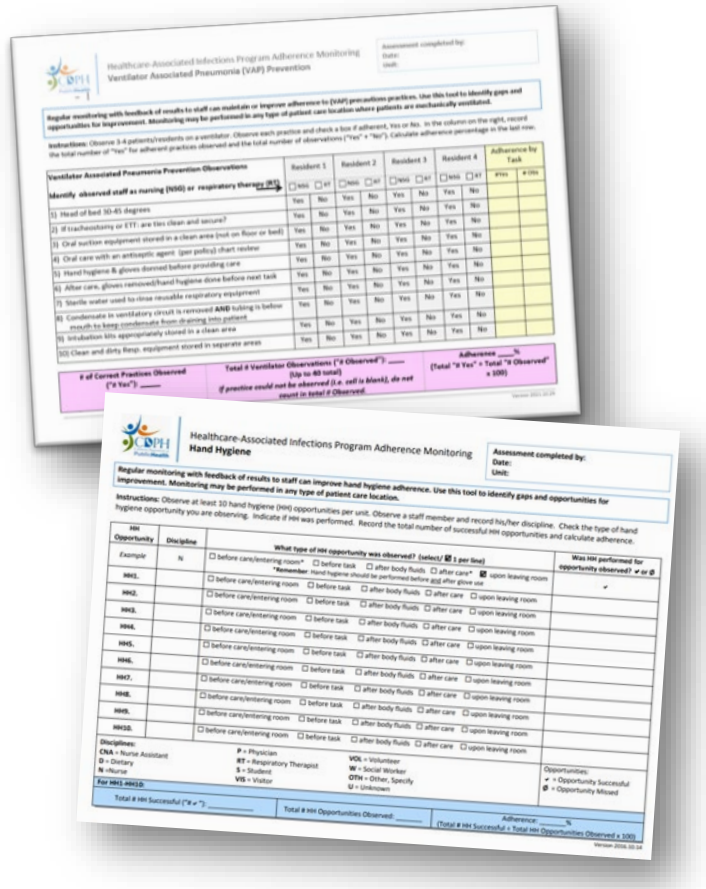
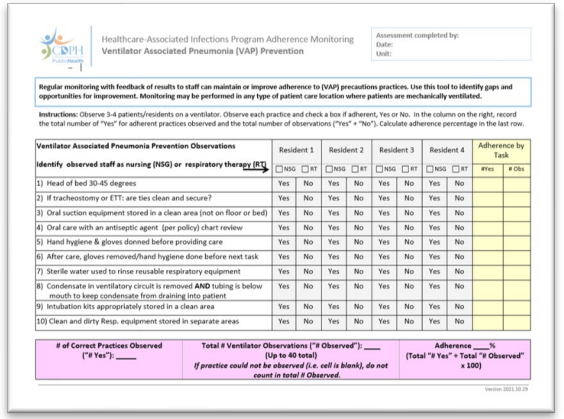


Perform VAP Prevention Adherence Monitoring

Mrs. Stevens:

- The resident is sleeping comfortably with the head of bed elevated at 25 degrees. Her tracheostomy dressing is clean, dry, and secure.
- The chart indicated her most recent mouth care occurred twenty minutes ago with a chlorhexidine swab. After care, you saw the nurse wash his hands before leaving the room.
- The tubing to the ventilator is clear without any condensate present. You see a back-up intubation kit, sterile rinse water, and oral suction equipment are stored in a clean area at the bedside. The room is neat and tidy without unused respiratory equipment present.



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6) After care, gloves removed/hand hygiene done before next task	Yes	No	Yes	No	Yes	No	Yes	No		
7) Sterile water used to rinse reusable respiratory equipment	Yes	No	Yes	No	Yes	No	Yes	No		
8) Condensate in ventilatory circuit is removed **AND** tubing is below mouth to keep condensate from draining into patient	Yes	No	Yes	No	Yes	No	Yes	No		
9) Intubation kits appropriately stored in a clean area	Yes	No	Yes	No	Yes	No	Yes	No		
10) Clean and dirty Resp. equipment stored in separate areas	Yes	No	Yes	No	Yes	No	Yes	No		
# of Correct Practices Observed ("# Yes"): ____	**Total # Ventilator Observations ("# Observed"): ____ (Up to 40 total)** ***If practice could not be observed (i.e. cell is blank), do not count in total # Observed.***						**Adherence ____% (Total "# Yes" ÷ Total "# Observed" x 100)**			

Version 2021.10.29

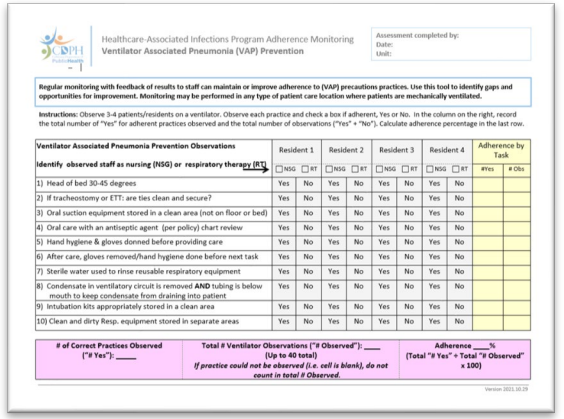
Use a VAP Prevention Adherence Monitoring Tool to complete this activity

California Department of PublicHealth

Perform VAP Prevention Adherence Monitoring

Mrs. Orange:

- You observe a respiratory therapist (RT) enter a room, don gloves, perform oral care with a CHG swab, rinse respiratory equipment with sterile water, and change the tracheostomy ties.
- After care there is an emergency in another room. The RT removes his gloves and leaves the room quickly.
- The head of the bed is left at 60 degrees and there is significant condensate left in the ventilatory tubing. The oral suction equipment is left on the bed. You cannot see an intubation kit at the bedside and or tell which respiratory equipment left in the room is clean or dirty, the room is a mess!



Healthcare-Associated Infections Program Adherence Monitoring
Ventilator Associated Pneumonia (VAP) Prevention

Assessment completed by:
Date:
Unit:

Regular monitoring with feedback of results to staff can maintain or improve adherence to (VAP) precautions practices. Use this tool to identify gaps and opportunities for improvement. Monitoring may be performed in any type of patient care location where patients are mechanically ventilated.

Instructions: Observe 3-4 patients/residents on a ventilator. Observe each practice and check a box if adherent, Yes or No. In the column on the right, record the total number of "Yes" for adherent practices observed and the total number of observations ("Yes" + "No"). Calculate adherence percentage in the last row.

Ventilator Associated Pneumonia Prevention Observations Identify observed staff as nursing (NSG) or respiratory therapy (RT)	Resident 1 ☐NSG ☐RT		Resident 2 ☐NSG ☐RT		Resident 3 ☐NSG ☐RT		Resident 4 ☐NSG ☐RT		Adherence by Task #Yes	 # Obs
1) Head of bed 30-45 degrees	Yes	No	Yes	No	Yes	No	Yes	No		
2) If tracheostomy or ETT: are ties clean and secure?	Yes	No	Yes	No	Yes	No	Yes	No		
3) Oral suction equipment stored in a clean area (not on floor or bed)	Yes	No	Yes	No	Yes	No	Yes	No		
4) Oral care with an antiseptic agent (per policy) chart review	Yes	No	Yes	No	Yes	No	Yes	No		
5) Hand hygiene & gloves donned before providing care	Yes	No	Yes	No	Yes	No	Yes	No		
6) After care, gloves removed/hand hygiene done before next task	Yes	No	Yes	No	Yes	No	Yes	No		
7) Sterile water used to rinse reusable respiratory equipment	Yes	No	Yes	No	Yes	No	Yes	No		
8) Condensate in ventilatory circuit is removed **AND** tubing is below mouth to keep condensate from draining into patient	Yes	No	Yes	No	Yes	No	Yes	No		
9) Intubation kits appropriately stored in a clean area	Yes	No	Yes	No	Yes	No	Yes	No		
10) Clean and dirty Resp. equipment stored in separate areas	Yes	No	Yes	No	Yes	No	Yes	No		
# of Correct Practices Observed ("# Yes"): ____	**Total # Ventilator Observations ("# Observed"): ____ (Up to 40 total)** ***If practice could not be observed (i.e. cell is blank), do not count in total # Observed.***						**Adherence ____% (Total "# Yes" ÷ Total "# Observed" x 100)**			

Version 2021.10.29

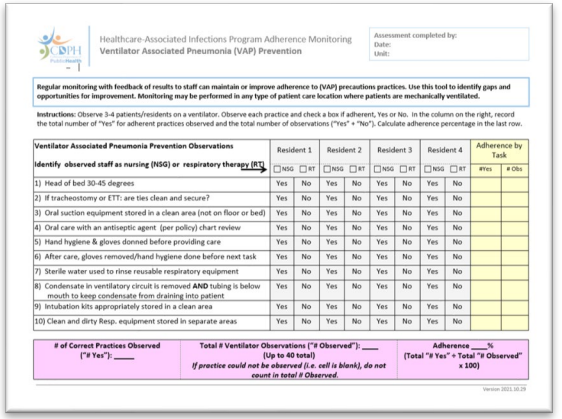
Use a VAP Prevention Adherence Monitoring Tool to complete this activity

California Department of PublicHealth

Perform VAP Prevention Adherence Monitoring

Mr. Ruiz:

- The resident is watching television with the head of bed at 35 degrees.
- Mr. Ruiz has recently received morning care; his tracheostomy ties are clean and secure, his oral care is complete, and the clean oral suction catheter and tubing are secured in a new holster on the wall.
- During your observation, an RT enters the room, and performs hand hygiene before donning gloves. The RT drains the condensate from the ventilatory circuit and tubing, then uses sterile water to rinse respiratory equipment.
- The RT removes her gloves and performs hand hygiene before leaving the room; she takes the soiled respiratory equipment to the utility room.
- Before leaving the room, you see there is an intubation kit stored nearby in a clean cabinet.



Healthcare-Associated Infections Program Adherence Monitoring
Ventilator Associated Pneumonia (VAP) Prevention

Assessment completed by:
Date:
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Ventilator Associated Pneumonia Prevention Observations Identify observed staff as nursing (NSG) or respiratory therapy (RT)	Resident 1 ☐NSG ☐RT		Resident 2 ☐NSG ☐RT		Resident 3 ☐NSG ☐RT		Resident 4 ☐NSG ☐RT		Adherence by Task #Yes	 # Obs
1) Head of bed 30-45 degrees	Yes	No	Yes	No	Yes	No	Yes	No		
2) If tracheostomy or ETT: are ties clean and secure?	Yes	No	Yes	No	Yes	No	Yes	No		
3) Oral suction equipment stored in a clean area (not on floor or bed)	Yes	No	Yes	No	Yes	No	Yes	No		
4) Oral care with an antiseptic agent (per policy) chart review	Yes	No	Yes	No	Yes	No	Yes	No		
5) Hand hygiene & gloves donned before providing care	Yes	No	Yes	No	Yes	No	Yes	No		
6) After care, gloves removed/hand hygiene done before next task	Yes	No	Yes	No	Yes	No	Yes	No		
7) Sterile water used to rinse reusable respiratory equipment	Yes	No	Yes	No	Yes	No	Yes	No		
8) Condensate in ventilatory circuit is removed **AND** tubing is below mouth to keep condensate from draining into patient	Yes	No	Yes	No	Yes	No	Yes	No		
9) Intubation kits appropriately stored in a clean area	Yes	No	Yes	No	Yes	No	Yes	No		
10) Clean and dirty Resp. equipment stored in separate areas	Yes	No	Yes	No	Yes	No	Yes	No		

# of Correct Practices Observed ("# Yes"): ____	Total # Ventilator Observations ("# Observed"): ____ (Up to 40 total) *If practice could not be observed (i.e. cell is blank), do not count in total # Observed.*	Adherence ____% (Total "# Yes" ÷ Total "# Observed" x 100)

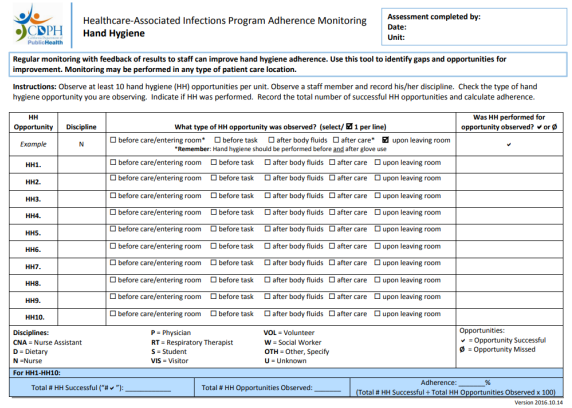
Version 2021.10.29

Use a VAP Prevention Adherence Monitoring Tool to complete this activity

Perform Hand Hygiene Adherence Monitoring

Record these events on a Hand Hygiene Adherence Monitoring Tool:

1. An LVN washes her hands before Mrs. Jostle's morning care
2. A CNA removes her gloves and immediately dons new gloves before Mrs. Birch's morning care
3. An RT washes his hands when leaving Mr. Green's room
4. An RN enters a room and gives Mr. Whiskers his pills
5. A CNA washes her hands after feeding Mrs. Jule



Healthcare-Associated Infections Program Adherence Monitoring
Hand Hygiene

Assessment completed by:
Date:
Unit:

Regular monitoring with feedback of results to staff can improve hand hygiene adherence. Use this tool to identify gaps and opportunities for improvement. Monitoring may be performed in any type of patient care location.

Instructions: Observe at least 10 hand hygiene (HH) opportunities per unit. Observe a staff member and record his/her discipline. Check the type of hand hygiene opportunity you are observing. Indicate if HH was performed. Record the total number of successful HH opportunities and calculate adherence.

HH Opportunity	Discipline	What type of HH opportunity was observed? (select/ ☑ 1 per line)	Was HH performed for opportunity observed? ✔ or Ø
Example	N	☐ before care/entering room* ☐ before task ☐ after body fluids ☐ after care* ☑ upon leaving room ***Remember:** Hand hygiene should be performed before and after glove use	✔
HH1.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH2.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH3.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH4.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH5.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH6.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH7.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH8.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH9.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH10.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	

Disciplines:
CNA = Nurse Assistant
D = Dietary
N =Nurse
P = Physician
RT = Respiratory Therapist
S = Student
VIS = Visitor
VOL = Volunteer
W = Social Worker
OTH = Other, Specify
U = Unknown

Opportunities:
✔ = Opportunity Successful
Ø = Opportunity Missed

For HH1-HH10:

Total # HH Successful ("# ✔"): _____ | Total # HH Opportunities Observed: _____ | Adherence: _____% (Total # HH Successful ÷ Total HH Opportunities Observed x 100)

Version 2016.10.14

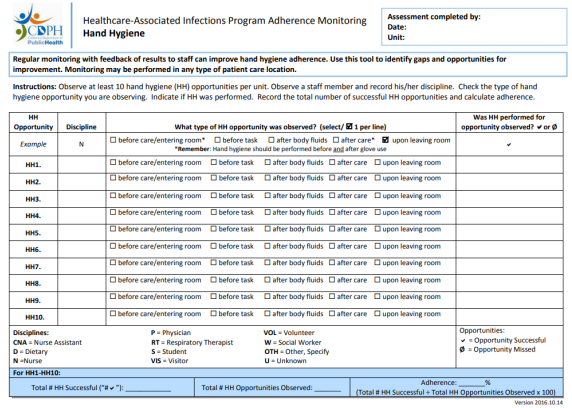
Use a Hand Hygiene Adherence Monitoring Tool to complete this activity

California Department of PublicHealth

Perform Hand Hygiene Adherence Monitoring

Record these events on a Hand Hygiene Adherence Monitoring Tool:

6. An LVN leaves the resident room for supplies without washing their hands
7. After toileting Mrs. Hernandez, the CNA washes her hands
8. Before changing Mrs. Santee's dressing, the RN uses alcohol hand rub on his hands
9. A doctor wipes his hands on his lab coat before assessing Mr. Tulle
10. A visitor leaves the room and goes directly to the kitchen for a cup of coffee



Healthcare-Associated Infections Program Adherence Monitoring
Hand Hygiene

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Unit:

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HH2.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
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HH4.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH5.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH6.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH7.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH8.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH9.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
HH10.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	

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✔ = Opportunity Successful
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For HH1-HH10:

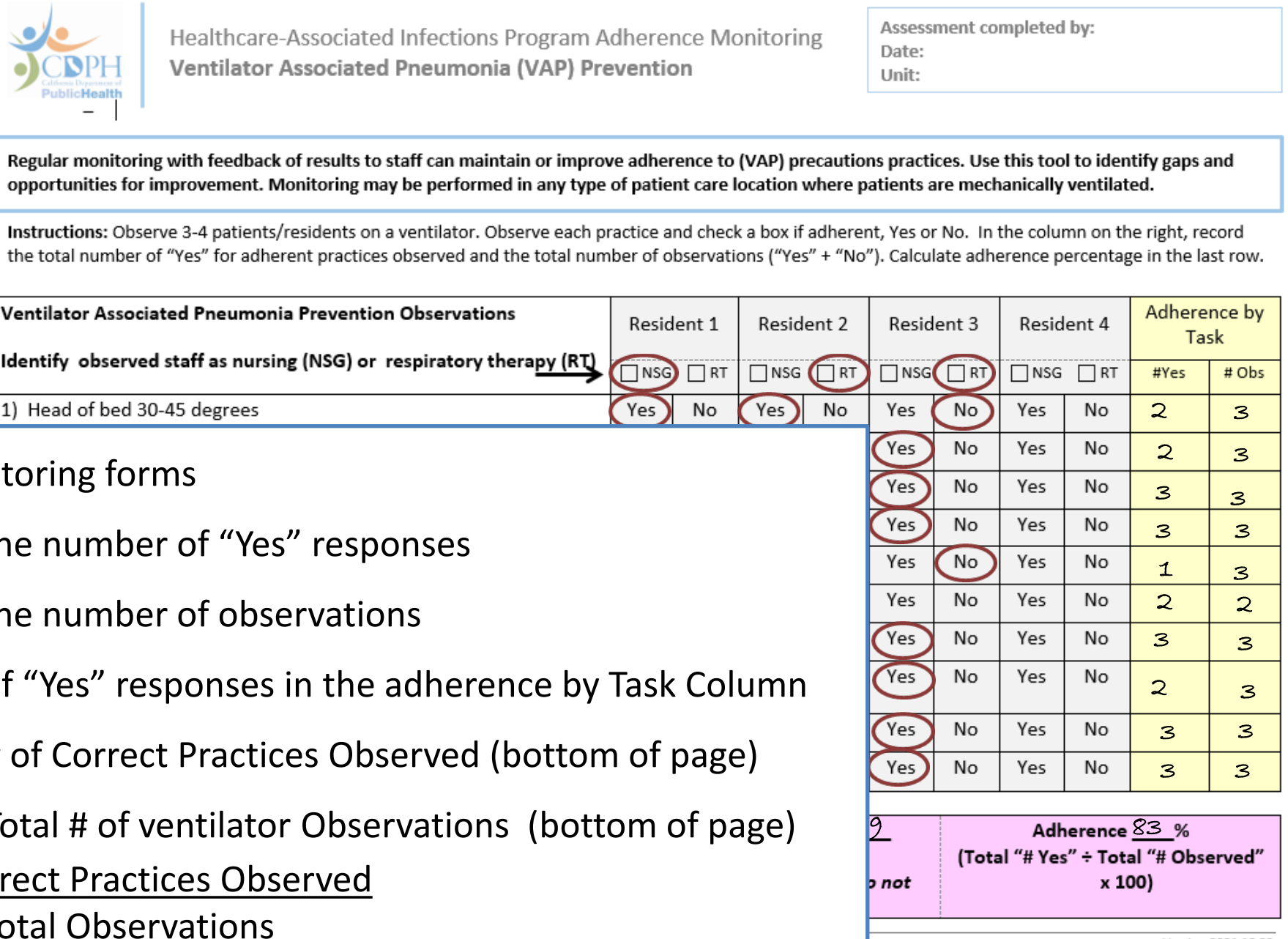
Total # HH Successful ("# ✔"): _____ | Total # HH Opportunities Observed: _____ | Adherence: _____% (Total # HH Successful ÷ Total HH Opportunities Observed x 100)

Version 2016.10.14

Use a Hand Hygiene Adherence Monitoring Tool to complete this activity

California Department of PublicHealth

VAP Prevention Adherence Monitoring Tool



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Ventilator Associated Pneumonia Prevention Observations **Identify observed staff as nursing (NSG) or respiratory therapy (RT)**	Resident 1		Resident 2		Resident 3		Resident 4		Adherence by Task	
	☐ NSG	☐ RT	☐ NSG	☐ RT	☐ NSG	☐ RT	☐ NSG	☐ RT	#Yes	# Obs
1) Head of bed 30-45 degrees	Yes	No	Yes	No	Yes	No	Yes	No	2	3
					Yes	No	Yes	No	2	3
					Yes	No	Yes	No	3	3
					Yes	No	Yes	No	3	3
					Yes	No	Yes	No	1	3
					Yes	No	Yes	No	2	2
					Yes	No	Yes	No	3	3
					Yes	No	Yes	No	2	3
					Yes	No	Yes	No	3	3
					Yes	No	Yes	No	3	3

9

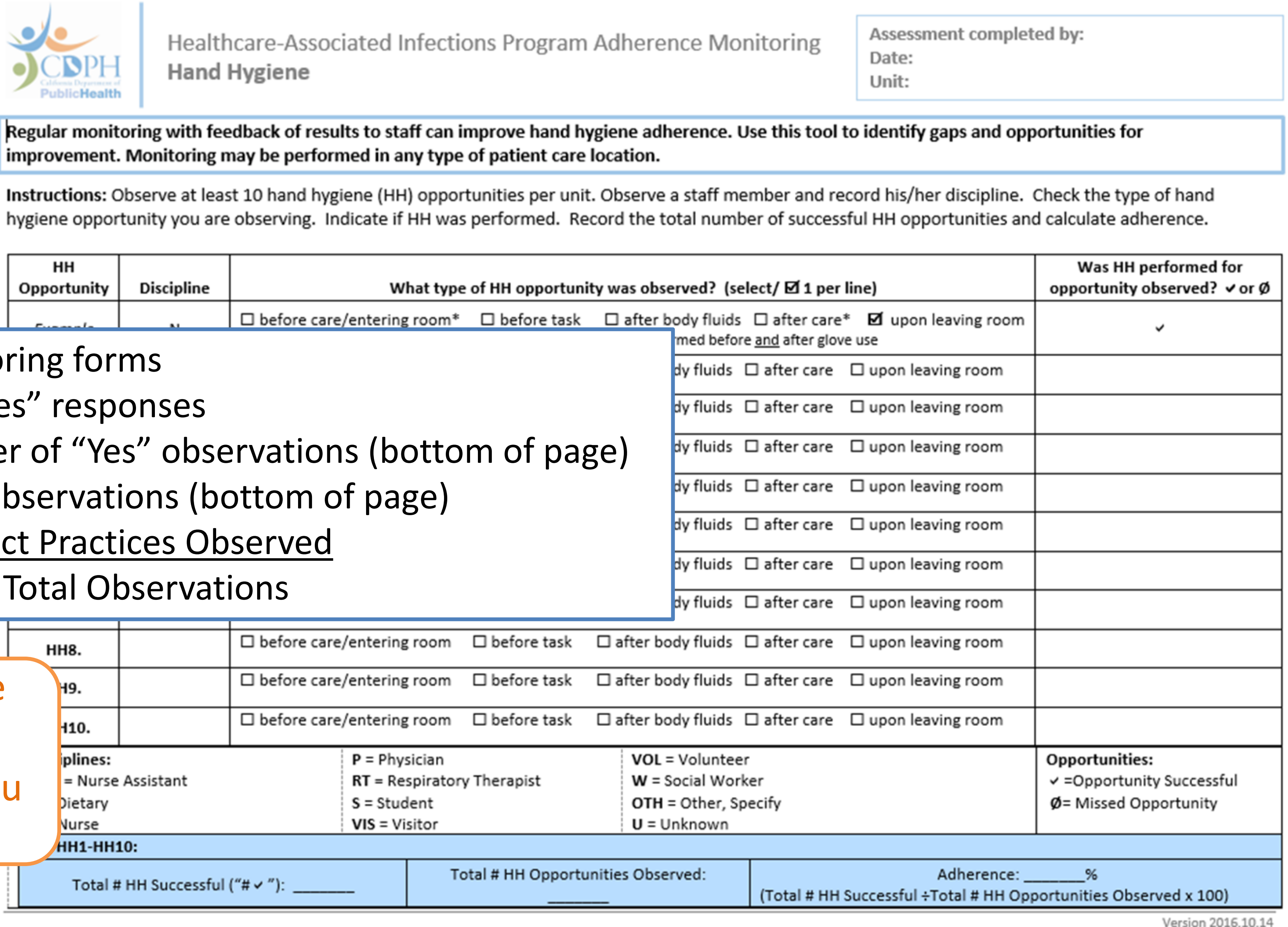
Adherence 83 %
(Total "# Yes" ÷ Total "# Observed" x 100)

Version 2021.10.29

Complete Adherence monitoring forms

- For each row, write in the number of "Yes" responses
- For each row, write in the number of observations
- Add the total number of "Yes" responses in the adherence by Task Column
  - Place number in "# of Correct Practices Observed (bottom of page)
  - Place number in "Total # of ventilator Observations (bottom of page)
- Adherence= $\frac{\text{\# of Correct Practices Observed}}{\text{Total Observations}}$

Hand Hygiene Adherence Monitoring Tool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Hand Hygiene

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HH Opportunity	Discipline	What type of HH opportunity was observed? (select/ ☑ 1 per line)	Was HH performed for opportunity observed? ✓ or Ø
Example	N	☐ before care/entering room* ☐ before task ☐ after body fluids ☐ after care* ☑ upon leaving room … med before and after glove use	✓
		… dy fluids ☐ after care ☐ upon leaving room	
		… dy fluids ☐ after care ☐ upon leaving room	
		… dy fluids ☐ after care ☐ upon leaving room	
		… dy fluids ☐ after care ☐ upon leaving room	
		… dy fluids ☐ after care ☐ upon leaving room	
		… dy fluids ☐ after care ☐ upon leaving room	
		… dy fluids ☐ after care ☐ upon leaving room	
HH8.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
…H9.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	
…H10.		☐ before care/entering room ☐ before task ☐ after body fluids ☐ after care ☐ upon leaving room	

…iplines: … = Nurse Assistant; …ietary; …urse; P = Physician; RT = Respiratory Therapist; S = Student; VIS = Visitor; VOL = Volunteer; W = Social Worker; OTH = Other, Specify; U = Unknown

Opportunities: ✓ =Opportunity Successful; Ø= Missed Opportunity

…HH1-HH10:

Total # HH Successful ("# ✓ "): ________ | Total # HH Opportunities Observed: ________ | Adherence: ________% (Total # HH Successful ÷Total # HH Opportunities Observed x 100)

Version 2016.10.14

Complete Adherence monitoring forms

- Add up the number of "Yes" responses
  - Write in total number of "Yes" observations (bottom of page)
  - Write in number of observations (bottom of page)
- Adherence= $\frac{\text{\# of Correct Practices Observed}}{\text{Total Observations}}$

Be consistent! Use the same descriptions the same way each time you fill out the form

Chat Discussion

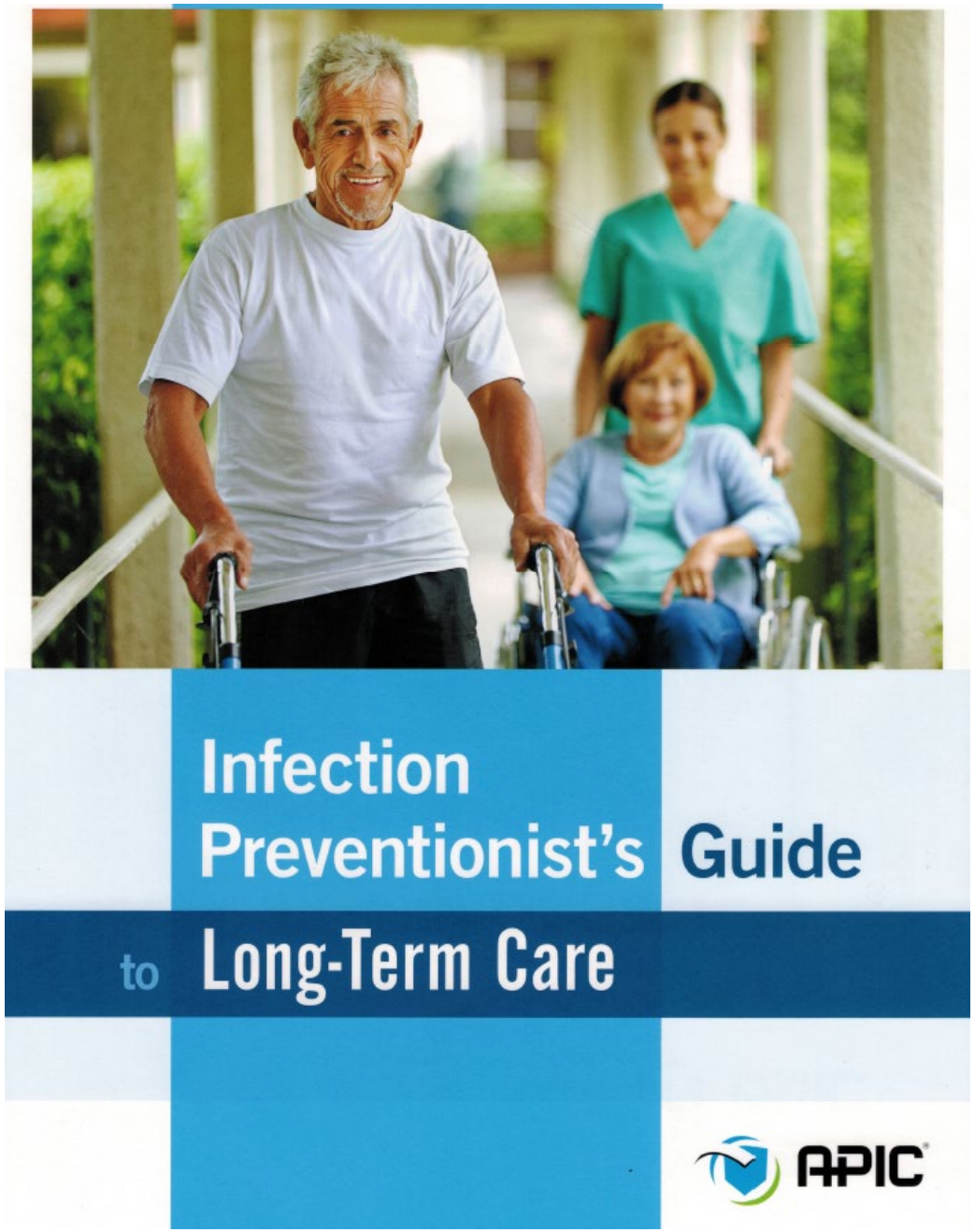
- Share one thing you learned from this activity
- Consider:
  - How difficult was it to complete the VAP Prevention and Hand Hygiene Adherence Monitoring Tools?
  - Did all group members record their findings the same way? If there were variations, describe.
  - What did you learn from this activity?
  - Are you comfortable using the adherence monitoring tools to assess hand hygiene and VAP prevention at your facility?

Summary

- Evidence-based prevention care practices prevent healthcare associated pneumonia
- SNF pneumonia prevention includes programs to vaccinate residents and health care providers
- Complications of ventilated patients are common, but many are preventable
- SNF should have a robust annual influenza plan in the infection prevention and risk assessment for the facility
- Adherence monitoring of prevention care practices and providing feedback to frontline staff improves outcomes

Infection Preventionist's Guide to Long-Term Care

Available at:
[APIC Website Store](apic.org/APICStore/Products/Product?id=SLS6008)
(apic.org/APICStore/Products/Product?id=SLS6008)



References and Resources - 1

- AHRQ Infection Prevention Resources
(ahrq.gov/hai/quality/tools/cauti/ltc/modules/resources/guides/infection-prevent.html)

- Centers for Medicare/Medicaid Services (CMS). Provider enrollment and certification information.
(www.cms.gov/Medicare/Provider-Enrollment-and-Certification/SurveyCertificationGenInfo/Downloads/Survey-and-Cert-Letter-17-30.pdf)

- Cieplik, F., Jakubovics, N. S., Buchalla, W., Maisch, T., Hellwig, E., & Al-Ahmad, A. (2019). Resistance Toward Chlorhexidine in Oral Bacteria - Is There Cause for Concern?. *Frontiers in microbiology*, *10*, 587. doi.org/10.3389/fmicb.2019.00587

References and Resources - 2

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- Greene LR, Sposato K, Farber MR, Fulton TM, Garcia RA. Guide to the Elimination of Ventilator – Associated Pneumonia. Washington, D.C.: APIC, 2009
- Institute for Healthcare Improvement (IHI)
  (ihi.org/resources/Pages/Tools/HowtoGuidePreventVAP.aspx)
- NHSN Patient Safety Module: Chapter 6 (PNEU/VAP), 2019 (PDF)
  (www.cdc.gov/nhsn/PDFs/pscManual/6pscVAPcurrent.pdf)

References and Resources - 3

- NHSN Patient Safety Module: Chapter 10(VAE), 2019 (PDF)
  (www.cdc.gov/nhsn/PDFs/pscManual/10-VAE_FINAL.pdf)
- SHEA Compendium: Strategies to Prevent Ventilator-Associated Pneumonia in Acute Care Hospitals: 2014 Update (PDF)
  (ww.cambridge.org/core/services/aop-cambridge-core/content/view/2D8A9D3BFD8BC8A68E04906B5C2CEF66/S0899823X00193894a.pdf/strategies-to-prevent-ventilator-associated-pneumonia-in-acute-care-hospitals-2014-update.pdf)
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- Stone, N.D., Muhammad S.A., Calder, J., et al, Surveillance definitions of infections in long-term care facilities: Revisiting the McGeer criteria. *Infection Control Hospital Epidemiology* 33(10):965-977, 2012. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3538836/


Questions?

Timeline

- **September 14:** Infection Surveillance
- **October 12:** Quality Improvement Project – Part 1
- **November 9:** Interfacility Transfer Communication (Joint meeting with LTACH partners)
- November 2022 – January 2023: Midpoint IP assessments
- **Through October 2023:** Continued monthly workshops and QI project implementation

Next Steps

- ❑ Fill out the **course evaluation** (Required for CEU)
- ❑ Complete your **onsite baseline assessment**
- ❑ Continue to **check in monthly** with your HAI Program IP
- ❑ Join us for our **next workshop on Wednesday, September 14, 2022**, 12-1:30PM: Infection Surveillance
- ❑ **Access resources** on the vSNF webpage (www.cdph.ca.gov/Programs/CHCQ/HAI/Pages/vSNF.aspx)

Questions?

Contact Erin Garcia at Erin.Garcia@cdph.ca.gov