



Acquired Infections in Long Term Care: Pneumonia

WWLHIN Nurse Led Outreach Team

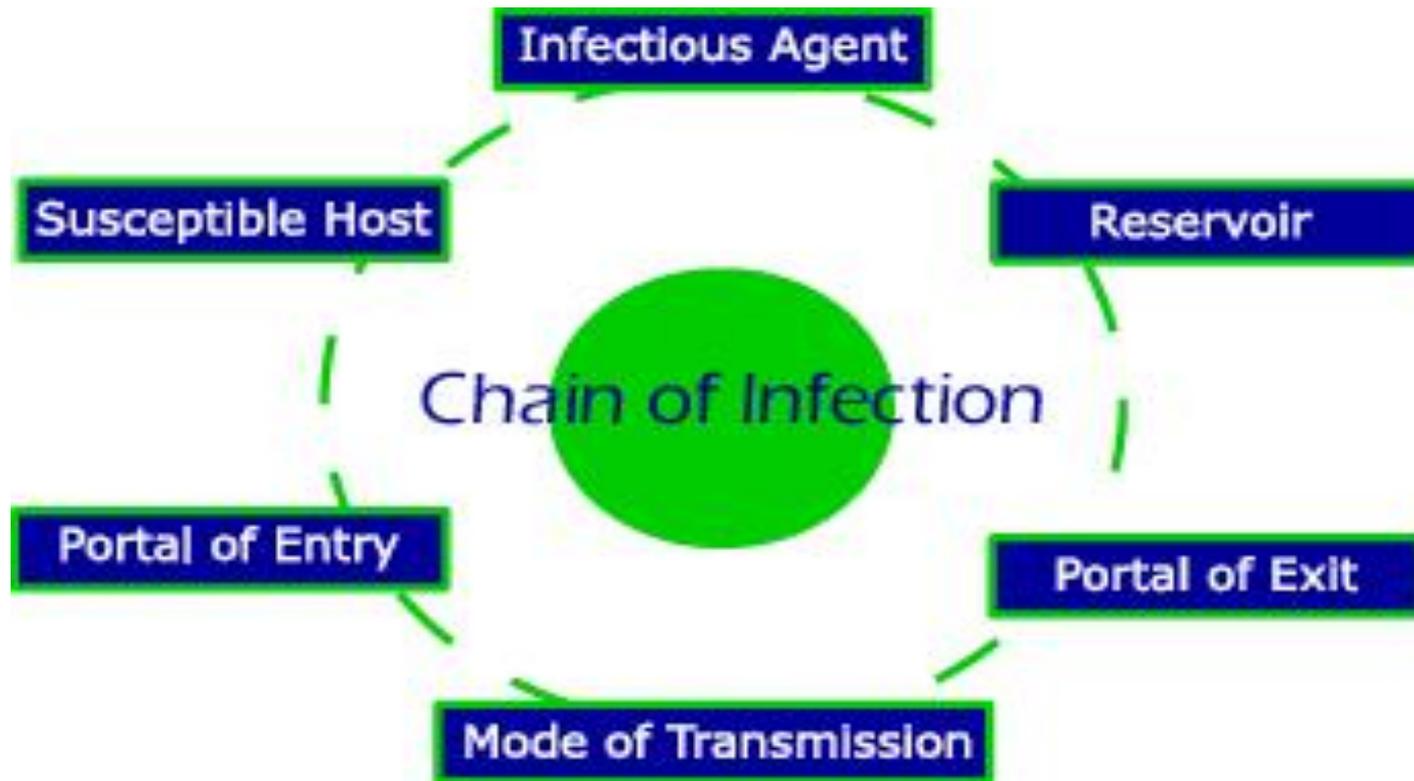
Miller Longanilla

David Scratch

Objectives

- To gain understanding of the chain of infection (5 minutes)
- Hand Hygiene – Breaking the chain of infection- *Glo-Germ (Interactive exercise) (5 minutes)*
- Pneumonia Protocol (20 minutes)

Chain of Infection



Your 4 Moments for Hand Hygiene



1 BEFORE initial resident / resident environment contact	WHEN? Clean your hands when entering: <ul style="list-style-type: none"> • before touching resident or • before touching any object or furniture in the resident's environment WHY? To protect the resident/resident environment from harmful germs carried on your hands
2 BEFORE aseptic procedures	WHEN? Clean your hands immediately before any aseptic procedure (e.g., oral dental care, eye drops, catheter insertion and changing a dressing) WHY? To protect the resident against harmful germs, including the resident's own germs, entering his or her body
3 AFTER body fluid exposure risk	WHEN? Clean your hands immediately after an exposure risk to body fluids (and after glove removal) WHY? To protect yourself and the health care environment from harmful resident germs
4 AFTER resident / resident environment contact	WHEN? Clean your hands when leaving: <ul style="list-style-type: none"> • after touching resident or • after touching any object or furniture in the resident's environment WHY? To protect yourself and the health care environment from harmful resident germs

Adapted from WHO poster "Your 5 moments for Hand Hygiene," 2006.

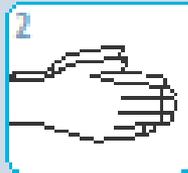
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How to handrub

Rub hands for 15 seconds



1 Apply 1 to 2 pumps of product to palms of dry hands.



2 Rub hands together, palm to palm.



3 Rub in between and around fingers.



4 Rub back of each hand with palm of other hand.



5 Rub fingertips of each hand in opposite palm.



6 Rub each thumb clasped in opposite hand.



7 Rub hands until product is dry. Do not use paper towels.



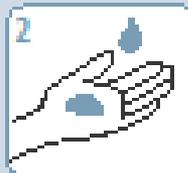
8 Once dry, your hands are safe.

How to handwash

Lather hands for 15 seconds



1 Wet hands with warm water.



2 Apply soap.



3 Lather soap and rub hands palm to palm.



4 Rub in between and around fingers.



5 Rub back of each hand with palm of other hand.



6 Rub fingertips of each hand in opposite palm.



7 Rub each thumb clasped in opposite hand.



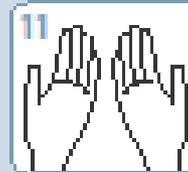
8 Rinse thoroughly under running water.



9 Pat hands dry with paper towel.



10 Turn off water using paper towel.



11 Your hands are now safe.



JUST CLEAN YOUR HANDS

Fact Sheet

Feuille de renseignements

PIDAC Provincial Infectious Diseases Advisory Committee
CCPMI Comité consultatif provincial des maladies infectieuses



Hand Hygiene Fact Sheet for Health Care Settings

In health care settings, hand hygiene is the single most important way to prevent infections.

Hand hygiene is the responsibility of the organization and all individuals involved in health care. Hand hygiene is a core element of client/patient/resident safety for the prevention of health care-associated infections and the spread of antimicrobial resistance. There are two methods of performing hand hygiene:

1. ALCOHOL-BASED HAND RUB (ABHR)

Alcohol-based hand rub is the preferred method for decontaminating hands. Using ABHR is better than washing hands (even with an antibacterial soap) when hands are not visibly soiled:

- ABHRs provide for a rapid kill of most transient microorganisms
- ABHRs contain a variety of acceptable alcohols in concentrations from 60 to 90%; 70 to 90% is preferred for health care settings
- ABHRs are not to be used with water
- ABHRs contain emollients to reduce hand irritation
- ABHRs are less time-consuming than washing with soap and water
- If running water is not available, use moistened towelettes to remove the visible soil, followed by ABHR.

2. HAND WASHING

Hand washing with soap and running water must be performed when hands are visibly soiled. Antimicrobial soap may be considered for use in critical care areas but is not required and not recommended in other care areas. Bar soaps are not acceptable in health care settings except for individual client/patient/resident personal use.

YOUR 4 MOMENTS FOR HAND HYGIENE

- 1. Before initial client/patient/resident or environment contact**
When? Clean your hands when entering:
 - before touching client/patient/resident or
 - before touching any object or furniture in the client/patient/resident's environment.**Why?** To protect the client/patient/resident and their environment from harmful germs carried on your hands.
- 2. Before aseptic procedure**
When? Clean your hands immediately before any aseptic procedure.
Why? To protect the client/patient/resident from harmful germs, including his/her own germs, entering his or her body.
- 3. After body fluid exposure risk**
When? Clean your hands immediately after an exposure risk to body fluids (and after glove removal).
Why? To protect yourself and the health care environment from harmful client/patient/resident germs.
- 4. After client/patient/resident or environment contact**
When? Clean your hands when leaving:
 - after touching client/patient/resident or
 - after touching any object or furniture in the client/patient/resident's environment.

Why? To protect yourself and the health care environment from harmful client/patient/resident germs.

FACTORS THAT REDUCE THE EFFECTIVENESS OF HAND HYGIENE

The following factors reduce the effectiveness of hand hygiene:

- **Condition of the skin:** See Section 4, "Hand Care", for information about maintaining skin integrity.
- **Nails:** Long nails are difficult to clean, can pierce gloves and harbour more microorganisms than short nails. Nails must be kept clean and short.
- **Nail polish:** Only nail polish that is fresh and free of cracks or chips is acceptable.
- **Artificial nails or nail enhancements** are not to be worn by those giving care.
- **Jewellery:** Hand and arm jewellery hinder hand hygiene. Rings increase the number of microorganisms present on hands and increase the risk of tears in gloves. Arm jewellery, including watches, should be removed or pushed up above the wrist before performing hand hygiene.
- **Products must be dispensed in a disposable pump container that is not topped-up, to prevent contamination**

From: Appendix C: PIDAC's Hand Hygiene Fact Sheet for Health Care Settings. In: Best Practices for Hand Hygiene in All Health Care Settings [Internet]. Toronto, ON: Ontario Ministry of Health and Long-Term Care/Public Health Division/Provincial Infectious Diseases Advisory Committee; May 2008. p. 48. http://www.health.gov.on.ca/english/providers/program/infections/diseases/best_prac/bp_hh_20080501.pdf

This fact sheet supersedes Hand Hygiene Fact Sheet for Health Care Settings, ISBN: 978-1-4249-3325-9



Nursing Home Acquired Pneumonia (NHAP)

- To enhance an earlier detection and treatment of NHAP

Why is Pneumonia important to LTC Populations?

- Incidence rate of 1.1.2 per 1000 patient days, and accounts for 13%-48% of all LTC infections.
- 33 out of 1000 LTC Home residents are hospitalized with LTC Acquired Pneumonia versus 1.14 out of 1000 in the community.
- There is a need for early detection in-home (within the LTC home) as opposed to relying on transfer to acute care. For frail individuals in LTC homes there are potential adverse outcomes related to transfer to acute care.
- Delay in administration of antibiotics for the empiric treatment of LTC Acquired Pneumonia may lead to increased resident morbidity and mortality. Initiation of antibiotic after eight hours is associated with increased mortality.



Prevention

- Limit the spread of infections (e.g., hand washing and attention to outbreak management guidelines)
- Influenza and pneumococcal vaccines are recommended
- Smoking cessation and avoidance of environmental tobacco smoke

Risk Factors

- Lower levels of functioning at an advanced age
- Significant co-morbid conditions, e.g., COPD, dementia and atherosclerotic heart disease.
- Other risk factors identified for death from nursing home acquired pneumonia include aspiration, bed-fast state, cerebrovascular accident, difficulty with oropharyngeal secretions, dysphagia, feeding tube, frailty, incontinence, and sedative hypnotic use.

Diagnosis

- Although a new infiltrate seen on chest X-ray with compatible clinical signs is the gold standard for the diagnosis of NHAP, in nursing home settings the diagnosis must often be made on clinical grounds alone. The physical examination must include blood pressure, heart rate, respiratory rate and auscultation of the respiratory system.

Diagnosis continued

- Diagnosis of pneumonia is based on a patient's history, comorbidities, physical findings, and chest X-ray.
- Symptoms of NHAP most commonly include fever, chills, dyspnea, pleuritic chest pain, and cough. With increasing age, symptoms of infection may not be as apparent and physical signs may be diminished. Fever may be less commonly observed but delirium and confusion may be more common in this population. Delirium or acute confusion is found in 44.5% of elderly patients with pneumonia.
- Tachypnea is the only physical sign for which a predictive value can be calculated for LTC residents. Normal respiratory rate in the elderly is 16 to 25 breaths per minute. A respiratory rate of > 25 breaths per minute has a sensitivity of 90% and a specificity of 95% for the diagnosis of pneumonia.

Clinical Practice Guideline - Pneumonia

SIGNS AND SYMPTOMS OF PNEUMONIA

If a chest X ray is not available, rapid or fast breathing and at least 1 of the following signs and symptoms should be present if the resident is to be diagnosed with pneumonia.

Fast or Rapid Breathing (Tachypnea)

- ✓ This is the most important sign
- ✓ Breathing rate of ≥ 25 breaths in a full minute is a sign that needs to be reported to the RPN or RN

AND AT LEAST ONE OF THE FOLLOWING

- ❖ Fever
 - Temperature of 37.8 or greater. Older persons may have a fever when the reading is lower on the thermometer than would be expected for a younger person.
Chills and shaking (rigors) are an important marker of infection.
- ❖ Chest Pain (Pleuritic Chest Pain)
 - Pain in the chest is often a sign of pneumonia especially if the resident has not had chest pain previously.
- ❖ Cough
 - A new cough with phlegm or even a cough without is an important sign
- ❖ Noisy Breathing
 - There may be wheezes or crackling that can be heard when the resident breathes.
- ❖ Signs of low oxygen levels (Hypoxemia)
 - This may be noticed by blue or purple lips and nail beds where the resident normally has pink lips and nails.
- ❖ New or More Confusion or Behaviours
- ❖ Shortness of Breath (Dyspnea)
- ❖ Fast or Rapid Pulse or Heart Rate

Adapted Guideline for the Identification and Management of Pneumonia

MANAGEMENT

Assessment

- ❖ If you are aware that the resident or his/her family has specific ideas for treatments when the resident is ill inform the RPN /RN
- ❖ Provide comforting care for example , changing the resident's position from lying to sitting up along with activities such as taking the temperature under the direction from RPN/RN
- ❖ Adequate fluid intake – Try to encourage fluids. A resident needs to drink at least 1 litre or 4/250 cc glasses in 24 hours to replace fluid loss.
- ❖ Be alert for signs of increasing illness such as increased or new coughing, difficulty breathing and increased listlessness or confusion. Report any new or increasing signs to the RPN/RN.

Adapted by D. Harrison from the Clinical Practice Guideline (CPG) developed by an Alberta CGP Working Group (2008).

Management

- Determine the degree of medical treatment desired by resident or legal decision maker
- Review vital signs

Consider transfer to hospital if impending respiratory failure or hemodynamic compromise

- Oxygenation

Oxygen therapy is indicated for hypoxemia (e.g., $O_2 < 90\%$)

If oxymetry is not available consider oxygen at 2 litres/minute

Note: COPD baseline oxygenation may be lower and therefore must be individually assessed

Management Continued

■ Antibiotic therapy

Ideally antibiotic therapy should be initiated as soon as possible (within 4 hours) after diagnosis

Note: Initiation of antibiotics after 8 hours is associated with an increased mortality

Parenteral (IM) treatment may be considered if patient unable to swallow

■ Hydration

Ensure adequate hydration (1 litre in a 24 hour period is required to replace insensible losses under most circumstances).

Management Continued

■ General Management

Analgesics/antipyretics for pain and fever

Cough suppressants are not routinely recommended

Care Team involved in daily assessments to alert physician to significant changes

- **Mobility**

- **Hydration:**

1 litre/day

- **Nutrition:**

weight loss of >5-10% is related to increased morbidity (Significant weight loss in the nursing home >5% in 30 days or >10% in 6 months)

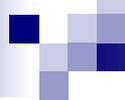
- **Review medication profile and consider holding or adjusting dosage where appropriate**

psychoactive drugs, including hypnotic sedative drugs and cardiovascular drugs

- **Review antibiotic treatments at 48 to 72 hours for evidence of response to therapy:**

temperature stabilization

lower respiratory rate



If failure of therapy occurs, consider change in antibiotics or transfer to hospital if:

- Hemodynamic compromise
- Clinical deterioration after 72 hours of antibiotic therapy
- No improvement after completion of antibiotic therapy

Resources

- Alberta Clinical Practice Group (2008). Guideline for The Diagnosis and Management of Nursing Home Acquired Pneumonia (NHAP) Available from
http://www.topalbertadoctors.org/informed_practice/clinical_practice_guidelines/complete%20set/Pneumonia_Nursing%20Home%20Acquired/NHAP_guideline.pdf
- Bridges to Care Resource Toolkit. Acquired Infections in Long-Term Care (LTC): Pneumonia
- Ontario Ministry and Long Term Care. Just Clean Your Hands for Long Term Care Homes Program.
<http://www.health.gov.on.ca/en/ms/handhygiene/moments.aspx>
- Waterloo Wellington Regional Infection Control Network
<http://chain.stylex.ca/english/index.html>



QUESTION 😊



Thank you 😊