Managing Respiratory Outbreaks in Long Term Care Facilities

Lindsay E. Nicolle University of Manitoba Winnipeg, Canada

Hosted by Paul Webber paul@webbertraining.com www.webbertraining.com

Respiratory Outbreaks in LTCF

Viruses

- · influenza A and B
- · respiratory syncytial virus
- parainfluenza (3)
- rhinovirus
- coronavirus

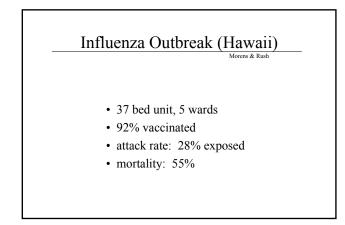
Respiratory Outbreaks in LTCF

<u>Bacteria</u>

- <u>Streptococcus pneumoniae</u>
- Hemophilus influenzae
- Chlamydia pneumoniae
- <u>Mycobacterium tuberculosis</u>
- Legionella spp (rare)
- Bordetella pertussis (rare)

Influenza Outbreaks

- most important: frequency impact
- mortality >5% (to 50%)
- high morbidity:
 - 20-30% infected (max 70%)
 - staff

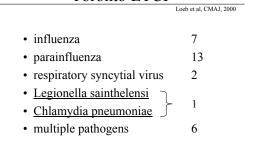


Other Respiratory Outbreaks

Frequency of Respiratory Outbreaks

- 16 outbreaks/5NH/3 years
- 0.42 infections/1,000 resident days
- 43% of all respiratory infections
- pneumonia: 72 (15%) of 480 residents
- case fatality: 8%

Etiology: Respiratory Outbreaks Toronto LTCF



Definition of Outbreak

• An increase in the number of RTI above expected on any nursing unit

Respiratory Outbreaks in LTC

- will occur
- practical approach
- occasional extraordinary

Managing Respiratory Outbreaks General Measures

- prevention
- · administrative leadership
- · early identification
- · outbreak response
- interventions: general
 - organism specific

General Measures

Prevention

- vaccinations: residents, staff
- personal hygiene: residents, staff
- · separation of ill residents

General Measures Administrative Leadership

- policies
- resources
- expertise

General Measures

Early identification

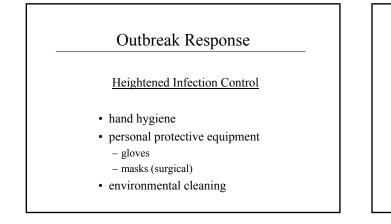
- community illness
- surveillance
- · clinical criteria: cough, fever, coryza
- cases: number temporal, spatial

staff

Early Identification	
Laboratory Diagnosis	
 plan developed with laboratory 	
 when outbreak suspected 	
• who to culture: symptoms	
 culture sites: – nasopharyngeal 	
– sputum	
• other tests	
- rapid tests	
– serology	

Outbreak Response

- authority: individual, team
- resources
- interventions
 - heightened infection control practice
 - separation/cohorting
 - restriction
 - disease specific
- case finding/monitoring



Outbreak Response

Separation/Restriction

- · single room/cohorting
- · dining/group activities
- visitors

Outbreak Response

Case Finding/Monitoring

- · identify extent and progress
- · efficacy of interventions
- end of outbreak

Specific Infections

- influenza
- S. pneumoniae
- Mycobacterium tuberculosis
- Legionella spp

Influenza Outbreaks/Policies

- · yearly vaccination residents/staff
- clinical/epidemiologic definitions
- · surveillance for outbreaks
- criteria for diagnostic specimens
- patient separation & visitor restriction
- notification of public health
- prophylaxis

Influenza Outbreaks LTC

Associations

- low vaccination rates
- \uparrow size of facility
- · residence on closed ward
- · meals in common dining area

Prevention of Infection Community Elderly

Influenza vaccination >60 years

<u>efficacy</u>

68%

- preventing laboratory proven illness 58%
- preventing respiratory illness 56%
- preventing pneumonia hospitalization 50%
- preventing death

Influenza: Surveillance Definition

Proposed

- attack rate ILI of 10%
- \geq 3 episodes 48 to 72 hr, one unit with one known case
- single confirmed case influenza A

Influenza: Specific Interventions vaccination: patients staff work exclusion: unvaccinated staff prophylaxis: who how long ? treatment

Influenza: Prophylaxis

 amantidine: less costly neurologic side effects dose adjustment/renal resistant viral strains only influenza A
 oseltamavir: more costly influenza A and B

Influenza Outbreak in LTC Use of Prophylaxis

- all residents
 - vaccinated/unvaccinated
- unvaccinated staff
- duration of outbreak (usually 2 weeks)

Streptococcus pneumoniae outbreak

- pneumonia or bacteremia
- <u>S. pneumoniae</u> isolated (sputum or blood)
- similar strain (typing)

Streptococcus pneumoniae Outbreak

Specific Issues

- vaccination
- drug susceptibility
- mass treatment

Pneumococcal Vaccine

- recommended all LTC residents
- ? efficacy
- ? protection in outbreaks

Pneumococcal Pneumo	onia Outbreak
	Tan et al, ICHE, 2003

S. Pneumoniae Outbreak		
Treatment		
• susceptibility		
penicillin		
macrolides		
 mass treatment 	t (?)	

