Cohorting in Acute Care Facilities

February 12, 2013
Setting the Context

• What brought us to hold this session?
• Acute Respiratory Infection (ARI) survey
• Cohorting – when and why
• The politics of cohorting
• Q & A
What brought us here?

- Late December 2012 through early January 2013 - surge of ARI cases presenting to hospitals
- January 9, 2013 - Public Health Ontario conducts ARI survey with hospitals
- ARI surge was more problematic in some areas than in others
- Patient transfers and cohorting identified as two significant issues
ARI Survey

- Phone survey asked hospitals about the ARI surge and what help they needed
- Resulted in patient transfer algorithm to address repatriation
- Cohorting also identified as an issue
Patient Transfer Algorithm

- January 24 – MOHLTC distributes algorithm to help with repatriation issue

Sample Transfer Algorithm for use during Outbreaks – Communication for Transfers & Returns Between Long Term Care Homes and Hospitals

LTCH – Long Term Care Home
PHU – Public Health Unit

After consultation with PHU, outbreak declared within entire LTCH or within a LTCH unit

Resident transfer to hospital is required

LTCH prepares transfer form with outbreak and line list status

Resident transferred to hospital with transfer form

Inpatient treatment

Hospital determines resident is ready for transfer back to LTCH

REFERENCES:

DISCLAIMER:
This algorithm is a guideline and does not constitute legal advice. This algorithm does not address all aspects of applicable legislation, including regulations and Orders under applicable legislation. It should be read in conjunction with all applicable legislation, including, but not limited to, the Long-Term Care Homes Act, 2007, the Health Protection and Promotion Act, and the regulations and Orders made under those Acts. In the case of any conflict, the provisions of the legislation, regulations and/or Orders are authoritative.
ARI in Acute Care Phone Survey

January 9, 2013
Number of admissions currently with ARI waiting for confirmation of infectious agents

Total # of sites in survey = 120

# of sites with missing data = 13

Total = 573  
25th percentile = 0

Lowest = 0  
Median = 1

Highest = 41  
75th percentile = 7

Responding Sites

Durham, Toronto
Ottawa
Mississauga
Number of admissions with influenza A

Total # of sites in survey = 120

# of sites with missing data = 19

Total = 241  25th percentile = 0

Lowest = 0  Median = 0

Highest = 40  75th percentile = 2
Total # of sites in survey = 120

# of sites with missing data = 22

Total = 8  25th percentile = 0
Lowest = 0  Median = 0
Highest = 2  75th percentile = 0

Ottawa, Kingston
Ottawa, London, Cambridge areas
Number of admissions with ARI (not influenza A or B)

Total # of sites in survey = 120

# of sites with missing data = 26

Total = 256  25th percentile = 0
Lowest = 0  Median = 0
Highest = 117  75th percentile = 2

Responding Sites

- Ottawa
- Toronto
- North Eastern Ontario
- London, Cambridge
Total # of sites in survey = 120

- No difference in patient flow: 8
- Patient flow normal for time of year: 24
- Movement to units slower than normal: 16
- Movement to units greatly reduced: 22
- ER at a severe standstill: 21
- ER on bypass: 1
- Other (with comments): 24

# of sites with missing data = 4
Number of Patients in ER with ARI Waiting for Lab Confirmation and Placement in Private Room

Total # of sites in survey = 120

# of sites with missing data = 15

Total = 192  
25th percentile = 0

Lowest = 0  
Median = 0

Highest = 16  
75th percentile = 2
Geographic Variability in Cohorting Practices

Number of sites and Their ARI Cohorting Practices

- **Not cohorting**
- **with similar symptoms**
- **with same lab-confirmed agent**
- **cohorting others to isolate ARI in private rooms**
- **with similar symptoms / with same lab-confirmed agents**
- **with similar symptoms / cohorting others to isolate ARI in private rooms**
- **with same lab-confirmed agent / cohorting others to isolate ARI in private rooms**
- **with similar symptoms / with same lab-confirmed agent / cohorting others to isolate ARI in private rooms**

RICNs:

- CEICN
- CICN
- CRICN
- CSICN
- CWICN
- ESCICN
- MHICN
- NEOICN
- NSMICN
- NWOICN
- SEOICN
- SWOICN
- TCICN
- WWICN
Summary of ARI Survey

• There was a large number of patients with ARI in acute care facilities
• Large number of patients with ARI waiting in ER
• Significant geographical variability
• Cohorting is problematic without a laboratory diagnosis
• Survey was a very effective way to get a picture of the provincial landscape in short order
• Many thanks to all participants
PIDAC’s Routine Practices/Additional Precautions Best Practice Document

• Cohorting is acceptable in *some* cases where patients/residents are known to be infected with the same microorganism (lab testing).

• In long-term care homes, spatial separation of residents within their bed space, dependant on a risk assessment of the resident, is recommended.
Applications of Cohorting

• Nosocomially acquired cases in an outbreak
  • to interrupt transmission that is happening in the institution

• Cohorting of admitted cases of ARI or gastro
  • to prevent transmission from admitted cases to others
Criteria for Cohorting

- When single rooms are not available or during outbreak situations
- Should be considered in outbreaks when transmission is documented and continues despite alternative interventions
- Should be considered when available facilities and staffing allow for the establishment of cohorting
- Should never compromise infection control practices and *Additional Precautions must be applied individually for each patient/resident within the cohort.*
Types of Cohorting

Patient Cohorting

• applicable in acute care settings for control of transmission of microorganisms or outbreaks

• In long-term care homes, movement of residents to achieve geographical cohorting is not appropriate

Staff Cohorting

• applicable in all health care facilities
Patient/Resident Cohorting

• The placement and care of individuals who are infected or colonized with the same microorganism in the same room
  • This means lab confirmation!!
  • This does NOT mean you can cohort everyone together that has general acute respiratory infection symptoms
  • This does NOT mean you can cohort VRE with MRSA or influenza with RSV

• Placing those who have been exposed together to limit risk of further transmission
Patient/Resident CohortIng

• In long-term care homes, resident cohorting does not imply that a resident is moved out of his/her room

• Assess patients/residents for the duration of colonization/infection (e.g. ARO’s)
Staff Cohorting

• Assigning specified health care providers to care only for patients/residents known to be colonized or infected with the same microorganism.

• Can be used in addition to patient/resident and geographical cohorting by assigning dedicated staff to care for either those patients/residents who are infected or colonized, or those who are not.

• Can be used during outbreaks to reduce the potential for cross-infection between patients/residents by limiting the number of staff interacting with patients/residents.
The Power and Pitfalls of Cohorting

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Key Advantages

• Segregation of known infectious patients
• Geographic co-localization
• Maximize limited isolation rooms
• Separation of defined patient care workers
• Sense that there is “control” of the situation
• Perhaps easier monitoring of impact
Pitfalls

• Movement of patients and relocation
• Initially lose bed space as the cohort location is defined and populated
• Diagnosis may be presumptive, uncertain or disputed
• Infection Control staff may be targeted as the “cause“ of elective admission disruption.
• Communications with the Medical staff is pivotal for success
Evidence For Cohorting

- No randomized, controlled trials comparing single-room isolation and cohorting
  - Most studies use uncontrolled before-and-after designs and include cohorting as part of a bundle of interventions

- In general, there is a theoretical risk of transmission between hospital roommates
  - Number of hospital roommate exposures per day associated with increased risk of MRSA and VRE and CPE (Lowe et al ICHE 2013) colonization or infection\(^1\)
  - Facilities that have moved to a location with single rooms for all patients have shown reductions in rates of MRSA, \(^2\) gram-negative bacilli, \(^2\) and *Clostridium difficile* infection (CDI) \(^3\)
Evidence For Cohorting

• Evidence for cohorting is limited
  • Relatively few studies
  • Poor methodological quality

• There is some weak evidence that cohorting may help to control outbreaks, particularly for RSV and MDR-GNB

• However, different pathogens have similar clinical presentations, particularly respiratory and GI illnesses, so it is essential to have a laboratory-confirmed diagnosis before cohorting
Solutions

• When cohorting is being considered, key admin and clinical staff must be involved in the discussion, decision, and implementation.

• A communication strategy is required and needs consistent and continuous messaging.

• Strong and unwavering senior admin support is required for success.
How to deal with uncertainty?

• Consider 3 cohorts:
  a) Known infections
  b) Exposed or presumed infectious
  c) Non-exposed groups

• For Influenza considering ILI as the diagnosis may be problematic

• Proper Routine Practice will suffice to prevent cross contamination
Thank you

Public Health Ontario thanks all of you for participating in the ARI survey
SCAN OF THE LITERATURE ON COHORTING
Acute Respiratory Infection (ARI)

- Consistent evidence that cohorting infants with RSV reduces nosocomial transmission\(^4\)
- No evidence for cohorting patients with other viruses\(^5\)
- Important to have a microbiologic diagnosis
  - A study of infants presenting with bronchiolitis found RSV in 28 of 50, influenza A in 3, rhinovirus in 9, and other picornaviruses in 2\(^6\)
  - If all infants in their sample had been cohorting, there would have been a risk of cross-infection with influenza A and other respiratory viruses
MRSA and VRE

• Decreased prevalence when patients are moved to a separate cohort ward\textsuperscript{7,8}

• Some studies have reported reductions in MRSA and VRE after implementation of cohorting, in combination with other measures such as decolonization\textsuperscript{9} or enhanced environmental cleaning\textsuperscript{10}

• Other studies have reported that cohorting did not reduce transmission\textsuperscript{11,12}
Multi-drug Resistant Gram Negative Bacteria

- Carbapenem-resistant *Klebsiella pneumoniae*\(^{13}\)
  - There was no change with implementation of single-room isolation, but there was a significant decrease in incidence after a cohorting policy was initiated
  - Cohorting was implemented simultaneously with enhanced environmental cleaning and screening of contacts

- Outbreak of MDR *Serratia marcescens*\(^{14}\)
  - Transmission stopped only after implementation of patient cohorting
  - The cohorting policy led to an increase in nurse-to-patient ratio that may have also contributed to the outbreak ending
GI Pathogens

• No studies of isolation or cohorting for patients with *Clostridium difficile* infection\textsuperscript{15}
References


References


