Minimising the impact of and spread of *Clostridium difficile* and vancomycin resistant enterococci in sub acute and residential aged care

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Southern Health Service

- Largest health service in Victoria
- Range of acute, sub-acute and long term care beds over several campuses
- Kingston Centre is the sub-acute and residential aged care epicentre of the network
- 202 Sub acute beds
- 284 Residential aged care beds

Vulnerability of this population

- Impaired mental and functional states
- Reduced innate immunity
- Malnutrition
- Chronicity of underlying diseases
- Close contact with infected/colonised residents/patients
- Increased antibiotic exposure

Is it infectious or isn't it?

Elderly sometimes have symptoms which can mimic gastroenteritis

- Chronic bowel disease
- Certain medications
- Age-related changes of faecal flora

Case study

- Index case:
  - Admitted with chronic diarrhoea, attributed to diverticular disease

BUT

- Another patient developed diarrhoea

THEN

Case study

- Three other patients developed diarrhoea in quick succession
- All tested positive for *C. difficile*

SO

- A faecal sample was obtained from the index case which also tested positive for *C. difficile*

Laboratory process

- Reflex testing for *C. difficile* for ≥ 3 inpatient days (as well as on request)
- GDH (screening test) for *C. difficile*, IF +VE
- Toxin B PCR (GeneXpert)

Outbreak measures

- Isolation of patients
- Implementation of Additional Strict Contact Precautions
- Emphasis on hand hygiene
- Increased environmental cleaning

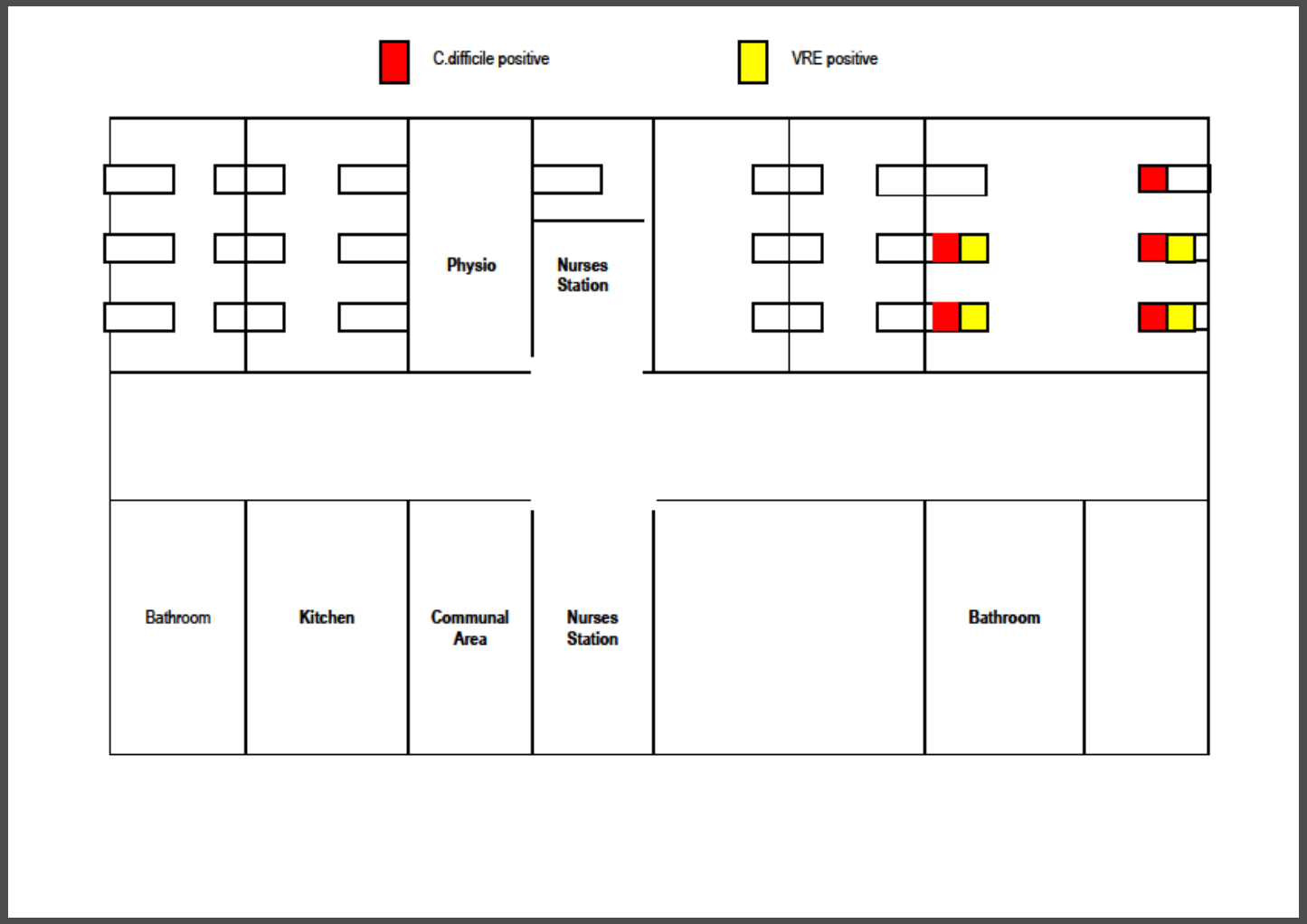
The VRE connection

- The first patient to develop *C.difficile* developed a urinary tract infection
- VRE was isolated from urine specimen

SO

- Contact tracing conducted which included:
  - five patients cohorted with index case
  - three of the five tested positive for VRE

Ward layout


C.difficile positive
VRE positive
Physio
Nurses Station
Bathroom
Kitchen
Communal Area
Nurses Station
Bathroom

Alarm bells!

Four of the five *C.difficile* positive patients tested positive for VRE

- Decision to conduct point prevalence survey of all patients on the ward

Results

- Twenty two patients tested
- One patient tested positive for VRE

Discussion

- Patient geographically remote from cluster of VRE positive patients
- Did not share a bathroom with cluster
- VRE rate low in patients **not** involved in outbreak

Alarm bells!

Outcome

- Reasonable to assume that transmission of VRE occurred during *C. difficile* outbreak
- The one patient found to be VRE positive was not considered part of the outbreak

Literature review

- Henrich T. et al Clinical risk factors for severe *Clostridium difficile* – associated disease. *Emerg Infect Dis*. 2009 March; 15(3): 415-422

- Crogan N. and Evans B. *Clostridium difficile*: an emerging epidemic in nursing homes. *Geriatr Nurs*. 2007 May-Jun; 28(3):161-4.

- Marciniak C. et al. Prevalence of *Clostridium difficile* colonization at admission to rehabilitation. *J of Arthroscopic and Related Surgery. 2006 August; 8(8):1086-1090.*

What did we learn?

- Consider *C. difficile* in all sub acute and residential aged care patients/residents with clinical suspicion of diarrhoea when requesting laboratory micro and culture
- In outbreak situations screen for VRE if known positive VRE patient part of outbreak
- Implementation of surveillance tool could identify an outbreak in early stages

Surveillance - *C. difficile*

Criteria for identifying patients who may be *C. difficile* positive

- Offensive diarrhoea
- Recent admission to another healthcare facility
- Receipt of antibiotic therapy during the last two weeks
- Use of gastric acid suppressive therapy

Why

- To expedite faecal testing and the implementation of additional precautions

Surveillance tool

Resident Identification Label

WARD:_____

BED NUMBER:_____

DATE ADMITTED:___/____/____

ONSET OF SYMPTOMS:___/___/___

CESSATION OF SYMPTOMS:____/____/____

Gastro-intestinal Notify Infection Control immediately		☐ Offensive, loose or watery stools ☐ Recent admission to another facility ☐ Receipt of antibiotic therapy during the previous 2 weeks ☐ Use of gastric acid suppressive therapy

Faecal Specimen Date:
(Staff to complete)

Surveillance - VRE

Criteria

- A (previously unknown) VRE positive patient who is part of *C. difficile* outbreak

How

- All patients involved in outbreak tested for VRE

Why

- To identify transmission during an outbreak situation and take appropriate steps to prevent further transmission to other patients

Conclusion

- High level of suspicion for *C. difficile* for all patients/residents in sub-acute and long term aged care facilities with offensive diarrhoea
- Surveillance tool to identify possible cases
- Faecal testing of possible cases
- In *C. difficile* outbreak situation where one patient is VRE positive, all patients involved should be tested for VRE

C. difficile – increased awareness

- Hypervirulent strains overseas causing major problems
- 027 strain in North America and Europe
- Recent cases in Victoria of 027 strain
- Point prevalence study of all positive *C. difficile* isolates for hypervirulence conducted in Victoria over month of August
- National study underway

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- Rhonda Stuart, Co-director Infection Control, Southern Health

References

- Crogan N. and Evans B. *Clostridium difficile*: an emerging epidemic in nursing homes. *Geriatr Nurs*. 2007 May-Jun; 28(3):161-4.
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Thank you

Questions?