

### REMOVING CONTACT PRECAUTIONS FOR VRE PATIENTS IN AN ENDEMICALLY COLONIZED RENAL MEDICINE/TRANSPLANT PATIENT POPULATION

CRAIG PEARCE

INFECTION PREVENTION AND CONTROL, FOOTHILLS MEDICAL CENTRE, CALGARY, ALBERTA



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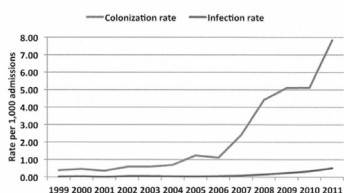
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### VRE INFECTION DATA – THE SEED OF AN IDEA

VRE colonization and infection rates per  
1,000 admissions, 1999-2011, CNISP data



Dr. Michelle Allz, Webber Toxicosis, "Is There Validity To VRE Admission Screening?" Dec 19, 2013

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### RISKS AND RATES OF VRE INFECTION

"Additionally, VRE infection rates have not increased proportionately. Although it is reassuring that infection rates remain much lower than colonization rates, it is still of concern to see an increase in VRE carriage, given the ability of the genes encoding vancomycin resistance to be transferred to *S. aureus*. It should be noted that 14.7% of patients in this cohort were colonized with both VRE and MRSA."

Vancomycin-Resistant Enterococci  
in Canada: Results from the Canadian  
Nosocomial Infection Surveillance  
Program, 1999-2005

INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY MARCH 2008, VOL. 29, NO. 3

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### VRE IN 1997 – CANADA COMMUNICABLE DISEASE REPORT

The CCDR recommended single rooms with private bathrooms for VRE patients with “diarrhea, fecal incontinence, an ileostomy or colostomy, or open wounds, or in whom basic personal hygienic practices may be compromised by illness or age.”

Canada Communicable Disease Report, Volume 235B, “Preventing the Spread of Vancomycin-Resistant Enterococci (VRE) in Canada”

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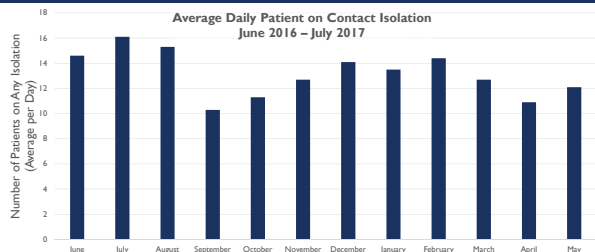
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### IS THIS A PROBLEM? ISOLATION BURDEN ON UNIT 37 AT FOOTHILLS MEDICAL CENTRE (FMC)




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### OUR LOCAL VRE DATA – SCREENING COSTS

| VRE Zone   | 2014-2015                                  |                 |                         |  |
|------------|--|-----------------|-------------------------|--|
|            | Screening test rate (per 1,000 admissions) | Positivity rate | Estimated cost (actual) | Estimated cost (rate per 1,000 admissions) |
| South      | 176.4                                      | 0.07            | \$ 81,990.00            | \$ 2,646.29                                |
| Central    | 277.5                                      | 0.02            | \$ 193,680.00           | \$ 4,162.92                                |
| Calgary    | 204.3                                      | 0.06            | \$ 426,345.00           | \$ 3,064.14                                |
| Edmonton   | 454.7                                      | 0.03            | \$ 909,705.00           | \$ 6,821.22                                |
| North      | 121.2                                      | 0.01            | \$ 79,650.00            | \$ 1,818.16                                |
| Provincial | 288.3                                      | 0.04            | \$1,691,378.00          | \$ 4,294.78                                |

2015 – 2016 Infection and Control Surveillance Annual Report, Alberta Health Services

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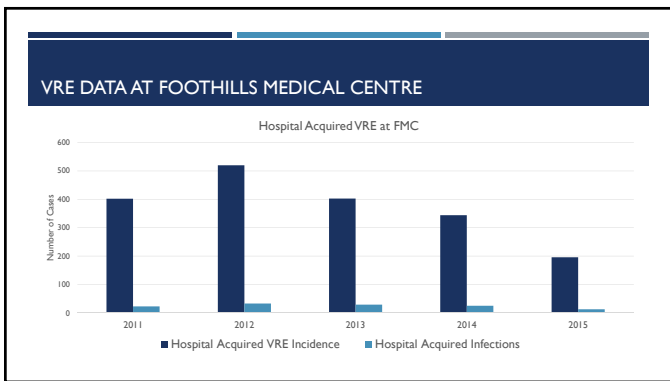
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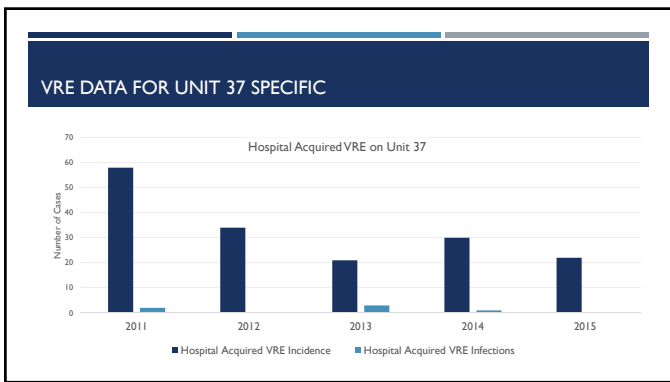
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### WHAT IS UNIT 37 AT Foothills Medical Centre

- 45 bed inpatient unit
  - 19 private rooms
- Renal medicine and solid organ transplant (kidney, kidney/pancreas, pancreas)
- Majority of patients are dialysis patients (lots of interaction with healthcare system)
- Majority of patients have central lines

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### WHAT WAS OUR INTERVENTION?

- Stop isolating low risk VRE colonized patients
  - Those without diarrhea
  - Those without MRSA/CPO
  - Those without draining wounds
  - Those without ILI
  - Those without other reasons for isolation
- Review all VRE positive patients for "risk"
- Clear Clutter
- Set up IPC Committee
- Increase number of hand hygiene observations collected monthly

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### OUR RESEARCH QUESTIONS

- Does removing contact precautions for VRE colonized patients admitted to a renal nursing unit affect the number of infections caused by VRE?
- Does removing contact precautions for VRE colonized patients admitted to a renal nursing unit affect staffing workload?
- Does removing contact precautions for VRE colonized patients admitted to a renal nursing unit affect administrative costs?

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### WHAT WERE OUR TIMELINES

Pre Intervention Period

• June 1, 2016 –  
May 31, 2017



Intervention Period

• June 1, 2017 –  
May 31, 2018

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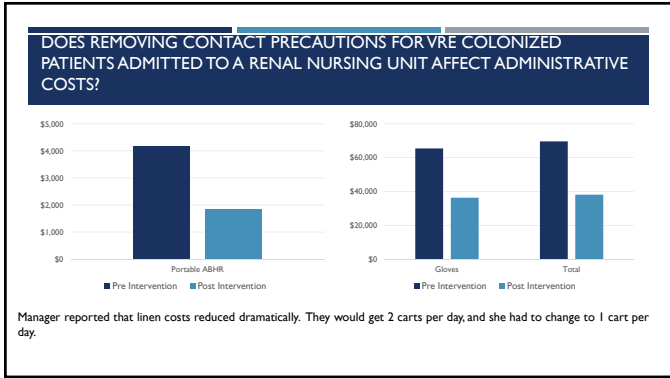
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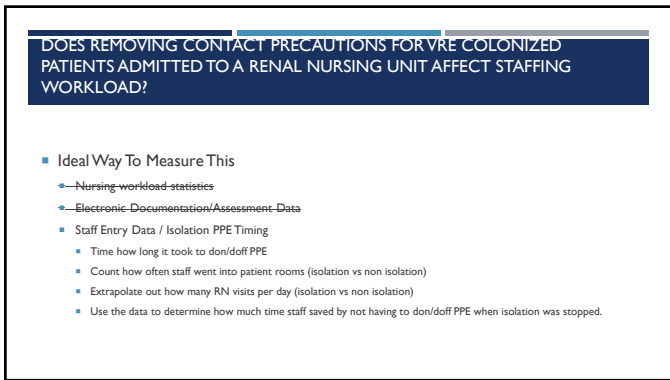
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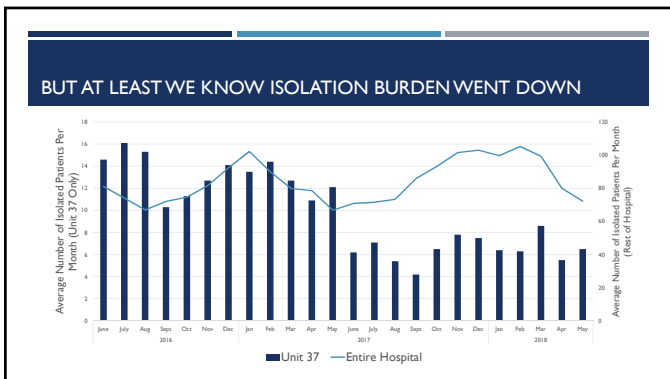
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**DOES REMOVING CONTACT PRECAUTIONS FOR VRE COLONIZED PATIENTS ADMITTED TO A RENAL NURSING UNIT AFFECT THE NUMBER OF INFECTIONS CAUSED BY VRE?**

|                                    | Pre Intervention (per 10,000 patient Days) | Intervention (per 10,000 patient Days) | P-value |
|------------------------------------|--|--|---------|
| MRSA (all)                         | 1.23                                       | 2.47 (†)                               | 0.4497  |
| C.difficile                        | 11.11                                      | 9.89 (‡)                               | 0.7038  |
| VRE Infections                     | 1.85                                       | 1.24 (‡)                               | 0.7184  |
| Bloodstream infections (all cause) | 4.32                                       | 1.85 (‡)                               | 0.2206  |

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**GOING FORWARD/RECOMMENDATIONS**

- Benefits of Less Isolation
  - Less intra-unit transfers
  - Improved staff/patient satisfaction
  - Lowered costs
  - No increase in transmission or infections
- Consider removing isolation for "low risk" VRE colonized patients
  - Isolate "high risk" patients only, as the CCDR first recommended in 1997
  - Ensure surveillance of infections continues to monitor for increases
- Use this as a "carrot" to enact other horizontal IPC practices

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**BRADFORD HILL CRITERIA FOR CAUSALITY**

**Strength, Consistency, Specificity, Temporality, Biological Gradient, Plausibility, Coherence, Experiment, Analogy, Reversibility**

**Biological gradient:** Greater exposure should generally lead to greater incidence of the effect. However, in some cases, the mere presence of the factor can trigger the effect. In other cases, an inverse proportion is observed: greater exposure leads to lower incidence.

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