**SUPPLEMENTARY APPENDIX**

**Table S1.** Intensive Care Unit (ICU) vancomycin-resistant enterococcus (VRE) Action Plan

|  |  |  |
| --- | --- | --- |
| **Action** | **Purpose** | **Comments** |
| Meetings with Stakeholders | To engender support and commitment from leadership and key stakeholders.  To discuss actions required, formulate an action plan, identify potential barriers and monitor progress. | Including the Director of the Intensive Care Services, Nursing Unit Managers of the ICU areas, Executive representative, Environmental Services Manager, Infection Control Practitioners and Infectious Diseases staff. |
| Education | To increase awareness regarding VRE incidence in the Unit and promote VRE control activities. | Education sessions for ICU staff providing information regarding VRE incidence, environmental contamination and infection control audits within the ICU. |
| Environmental Cleaning | To reduce microbial contamination associated with the environmental reservoir contributing to ongoing VRE transmission. | Regular cleaning inspection “rounds” in the ICU.  Review and revision of cleaning schedules.  Dedicated cleaning team in ICU for all cleaning including terminal cleaning.  Use of sodium hypochlorite disinfectant for cleaning.  Terminal cleaning for all discharges from ICU.  Special attention to high-touch surfaces and dedicated cleaning of shared equipment (including ultrasound probes and blood gas analyzer).  Additional cleaning of pan-rooms.  Reduction of clutter in the ICU to facilitate cleaning and reduce contamination of equipment and supplies.  Better separation of clean and dirty areas. |
| Single patient use equipment | To reduce transmission associated with shared equipment. | Including blood pressure cuffs. |
| Hand hygiene promotion | To reduce VRE cross-transmission. | New posters with key clinicians from within and outside the ICU to encourage hand hygiene.  Intensification of audits.  Regular feedback of hand hygiene compliance rates in real-time and discussion in Departmental meetings. |
| Isolation of patients | To reduce transmission from VRE patients. | Reinforce adherence to contact precautions for patients colonized or infected with VRE. |
| Antimicrobial Stewardship | To reduce emergence of resistance associated with inappropriate antibiotics use. | Review of glycopeptide and broad-spectrum antibiotic use.  Feedback of antibiotic use data to ICU clinicians. |

**Table S2.** Vancomycin-resistant *Enterococcus faecium* (VRE) acquisition rates in the Intensive Care Unit

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Overall | | | | | ICU-1 | | | | | ICU-2 | | | | |
|  | Year | No. | Patient-days | Rate (per 1000 patient-days) | IRR (95%CI)a | p value | No. | Patient-days | Rate (per 1000 patient-days) | IRR (95%CI) | p value | No. | Patient-days | Rate (per 1000 patient-days) | IRR (95%CI) | p value |
| All VRE | | | | | | | | | | | | | | | | |
|  | 2013 | 27 | 8642 | 3.12 | - | - | 12 | 3996 | 3.00 | - | - | 15 | 4646 | 3.23 | - | - |
|  | 2014 | 63 | 9038 | 6.97 | 2.23 (1.42-3.50) | **<0.001** | 37 | 4109 | 9.01 | 3.00 (1.56-5.75) | **0.001** | 26 | 4929 | 5.28 | 1.63 (0.87-3.08) | 0.130 |
|  | 2015 | 71 | 8830 | 8.04 | 1.15 (0.82-1.62) | 0.409 | 38 | 4011 | 9.47 | 1.05 (0.67-1.65) | 0.826 | 33 | 4819 | 6.85 | 1.29 (0.78-2.17) | 0.320 |
|  | 2016 | 70 | 9554 | 7.33 | 0.91 (0.66-1.27) | 0.581 | 32 | 4148 | 7.72 | 0.81 (0.51-1.30) | 0.392 | 38 | 5406 | 7.03 | 1.05 (0.64-1.64) | 0.913 |
| *vanA* VRE | | | | | | | | | | | | | | | | |
|  | 2013 | 3 | 8642 | 0.35 | - | - | 0 | 3996 | 0 | - | - | 3 | 4646 | 0.65 | - | - |
|  | 2014 | 35 | 9038 | 3.87 | 11.16 (3.43-36.27) | **<0.001** | 21 | 4109 | 5.11 | b |  | 14 | 4929 | 2.84 | 4.40 (1.26-15.31) | **0.020** |
|  | 2015 | 56c | 8830 | 6.34 | 1.64 (1.07-2.50) | **0.022** | 31c | 4011 | 7.73 | 1.51 (0.87-2.63) | 0.143 | 25c | 4819 | 5.19 | 1.83 (0.95-3.51) | 0.071 |
|  | 2016 | 52 | 9554 | 5.44 | 0.86 (0.59-1.25) | 0.427 | 25 | 4148 | 6.03 | 0.78 (0.46-1.32) | 0.355 | 27 | 5406 | 4.99 | 0.96 (0.56-1.66) | 0.891 |
| *vanB* VRE | | | | | | | | | | | | | | | | |
|  | 2013 | 24 | 8642 | 2.78 | - | - | 12 | 3996 | 3.00 | - | - | 12 | 4646 | 2.58 | - | - |
|  | 2014 | 28 | 9038 | 3.10 | 1.12 (0.65-1.92) | 0.694 | 16 | 4109 | 3.89 | 1.30 (061-2.74) | 0.496 | 12 | 4929 | 2.44 | 0.94 (0.42-2.10) | 0.885 |
|  | 2015 | 17c | 8830 | 1.93 | 0.62 (0.34-1.14) | 0.122 | 8c | 4011 | 1.99 | 0.51 (0.22-1.20) | 0.122 | 9c | 4819 | 1.87 | 0.77 (0.32-1.82) | 0.548 |
|  | 2016 | 18 | 9554 | 1.88 | 0.97 (0.50-1.90) | 0.949 | 7 | 4148 | 1.69 | 0.85 (0.31-2.33) | 0.747 | 11 | 5406 | 2.04 | 1.09 (0.45-2.63) | 0.849 |

NOTE. IRR, incidence rate ratio; CI, confidence interval; VRE, vancomycin-resistant enterococcus.

aCompared with prior calendar year.

bUnable to calculate - denominator zero.

cThere were two isolates carrying both the *vanA* and *vanB* genes, one each in ICU-1 and ICU-2.