

EV0886

ePoster Viewing

Nosocomial infection surveillance & epidemiology

Seek and you will find. Vancomycin-resistant *E. faecium* in the intensive care unit (ICU)

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Background: Ireland has the highest rate of invasive vancomycin-resistant enterococci (VRE) in Europe at 46% as reported to EARS-Net. To limit VRE transmission, active surveillance screening is conducted in Beaumont Hospital, Dublin. However, the environment is rarely sampled nor isolates typed outside of outbreaks, limiting our ability to track transmission.

Material/methods: We investigated possible transmission events in an ICU, over two years outside of outbreaks, based on clinical epidemiology (e.g temporal and spatial links between patients and their environment) and the use of pulsed field gel electrophoresis (PFGE).

Results: Of 1722 environmental sites sampled, 9 % were VRE positive with sub-standard isolation rooms, the most contaminated. Of 157 patients, 19.1 % were colonized with VRE and epidemiological links were identified between patients and their environment. PFGE of VRE *Enterococcus faecium* (VRE fm) showed significant genetic diversity among the patient isolates but environmental isolates were more clonal. Two environmental clusters and one environmental/patient cluster were identified which were not apparent from routine surveillance.

Conclusions: The physical environment may contribute to VRE transmission but different clonal patterns amongst patient and environmental isolates highlights the complexity of VRE fm transmission. Further prospective studies, outside of outbreaks can support infection prevention and control interventions through identifying transmission events.