Supplementary Online Content

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eMethods. Detailed Methodology

This supplementary material has been provided by the authors to give readers additional information about their work.

eMethods. Detailed Methodology

Laboratory Techniques

VRE screening

Screening swabs are collected from the rectum, stool, or colostomy, but clinical samples are also accepted if requested by the infection control team. Briefly, swabs are first incubated in a vancomycin and aztreonam VRE selective broth. If there is growth at 18-24 hours, polymerase chain reaction is performed using internally derived primers for vanA, B, and B2/3 genes. If the PCR is positive, the broth is subcultured on a VRE specific chromogenic agar (Bio-Rad) to confirm presence of enterococcus. If any step is negative, the patient is considered not to be colonized with VRE. This protocol does not screen for other van phenotypes or for species with intrinsic vancomycin resistance.

MRSA screening

Patients usually have MRSA screening swabs collected from the nares, but clinical samples are also accepted (e.g. perianal region, open wounds, and catheter sites). Swabs are inoculated on MRSA chromogenic plates (Bio-Rad) and in a *Staphylococcus* broth that contains 2.5% NaCl and 8mg/L of aztreonam (Oxoid). Typical colonies on the chromogenic plates are confirmed to be *S. aureus* via wet mount and latex agglutination testing (Bio-Rad). Atypical colonies undergo confirmatory testing via real-time polymerase chain reaction (PCR) for mec genes in the LightCycler 480 instrument (Roche) in order to ascertain that methicillin resistance was conferred by mecA. Broth from specimens with negative plates at 24 hours subsequently

undergo an internally validated PCR test to detect the presence of *S. aureus* genes. A negative PCR result substantiates the absence of MRSA, whereas broth from a positive PCR is sub-cultured on a blood agar plate (Oxoid) and chromogenic agar to confirm the presence or absence of MRSA as above.

Screening techniques and recording of nosocomial infections:

Patients are screened on admission and this serves as their baseline status. All patients are screened by the admitting nurse as part of a medical directive. Weekly prevalence screens are performed by the patient's nurse on the assigned day of screening.

Hospital-based commercial software was used for data entry and analysis (Nosokos). Reports are generated from this software and submitted to the board of directors of the hospital and to the provincial government. The data available for this study was aggregate data of number of infections/colonizations, and patient days by site, and fiscal period. No individual patient data was available or used for this study.

Additional infection control measures:

Throughout the study we had regular education sessions coupled with audit and feedback of hand hygiene, respect of contact precautions, and glove and gown use. In the old site, each multi-bedded room shared one bathroom and sink, and alcohol rinse dispensers were not located within the room, but outside of each room. In the new hospital, although access to hand hygiene sinks and alcohol rinse dispensers was increased, with every private room having a sink inside the room and an alcohol rinse dispenser outside of the room, this did not dramatically improve covertly monitored hand hygiene compliance. We also conducted regular

audits of routine and discharge cleaning with feedback. The institutional antibiotic stewardship program that was maintained throughout the entire period of study was geared towards minimizing CDI (limiting use of broad-spectrum antibiotics, re-evaluating duration of use of antibiotics, minimizing quinolones and clindamycin, carbapenems and intravenous vancomycin).