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Impact of an educational programme for reduction of central line associated bloodstream infection in non ICU settings: focus on maintenance practices

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Background Best practices during central line insertion are a recognized method to prevent central line associated bloodstream infection (CLABSI). In hospitals where this first step is already accomplished, well-established central line maintenance practices are essential to CLABSI prevention and it is now a focus of performance improvement and quality assurance in patient care. However, despite recognition of the importance of central line maintenance, compliance to best practices may be inadequate in non-ICU wards, which have not generally been included in CLABSI prevention efforts. The purpose of this study was to develop, implement, and evaluate a central line care maintenance bundle designed to optimize central line maintenance practices and reduce CLABSI in non-ICU setting.

Material/methods: This is an ongoing before-after study conducted at Hospital Moinhos de Vento, a private hospital in south Brazil. From January to July 2016, patients in wards with a central line received a standard care and once a month a group of specialized nurses reviewed in a point/prevalence approach insertion sites and dressings. After August, we formed the “Infusion Therapy Team” (2 infection control nurses, 10 nurses and 2 nurse-technicians) that once a week visits all wards emphasizing with an educational approach hand hygiene prior manipulation, proper dressing change procedure, disinfection of catheter hubs prior to central line manipulation, besides looking for insertion site signs of infection.

Results: Since January 2016, forty-five CLABSI were identified in non ICU-wards (38 patients): 63% were short-term venous catheters (median time to infection 19 days) and 37% were long-term catheters (median time to infection 44 days). Microorganisms more frequently isolated were coagulase negative Staphylococcus (22%), Escherichia coli (17%) and Klebsiella sp (14%). The pre-intervention CLABSI incidence density was 3.49 per 1000 catheter-days (40 infections) versus 0.99 per 1000 catheter-days (5 infections) during intervention, an infection reduction rate of 72%.

Conclusions: The implementation of an educational program for adequate process on maintenance of central lines significantly reduces the incidence of CLABSI. A team focused on prevention with systematic actions, even without introduction of new technologies aimed to prevent infections, has a positive impact in reducing CLABSI without increasing costs. The next step for improving infections rates will be daily reassessment of the need for continued central line access.