

“Our results reveal the deleterious impact of the reorganization during the hospital moving on the CRBSI incidence rate, and the possible implication of inexperienced team of nurses” Elea et al (2015).

Reference:

Elea, M.C., N’Guyen, M., Valdeyron, M.L., Quessada, T., Goudable, J., Loras-Duclaux, I., Marotte, S., Heissat, S., Restier, L., Lachaux, A. and Peretti, N. (2015) Dramatic increase of central venous catheter-related infections associated with a high turnover of the nursing team. *Clinical Nutrition*. March 26th. .

Abstract:

**BACKGROUND & AIMS:** This retrospective study evaluated the impact of new organization during the moving to a new university pediatric hospital on the incidence of central catheter-related blood stream infections (CRBSIs) among children on long-term parenteral nutrition.

**METHODS:** The study ran from April 2007 to March 2014, starting a year prior to reorganisation of the department of pediatric Hepato-Gastroenterology and Nutrition associated to moving the children to a new hospital in April 2008, and continuing for 6 years following the move. During this time, data from all children hospitalized in this department who received parenteral nutrition (PN) for more than 15 days were analysed.

**RESULTS:** During this 7-years study, 183 children aged  $4.6 \pm 0.5$  years received prolonged PN. Intestinal diseases were the main aetiologies (89%), primarily short bowel syndrome (18.4%), Hirschsprung disease and CIPO (13.5%) and inflammatory bowel disease (13.8%). The mean durations of hospitalization and of PN during hospitalization were, respectively,  $70 \pm 2.1$  and  $55.7 \pm 3.6$  days. During the study period, 151 CRBSIs occurred in 77 children (42% of all patients), i.e. 14.8 septic episodes/1000 PN days and 12.0 septic episodes/1000 CVC days. No patient died of a central venous catheter-related infection. However, following the move from the older hospital to the newer one, the rate of CRBSIs significantly doubled, from 3.9/1000 to 8.8/1000 CVC days ( $p = 0.02$ ). During the following 4 years, the incidence of CRBSIs tended to increase between the 2nd and the 5th year after the move: 11.3 ( $p = \text{NS}$ ); 21.4 ( $p = 0.01$ ); 17.3 ( $p = \text{NS}$ ), 20.3/1000 ( $p = \text{NS}$ ) CVC days. We also observed that after evaluations by the Department of Infection Control, nurse training and stabilization of the nursing team, the incidence decreased significantly from 20.3 to 11.1/1000 CVC days during the 6th year after the move ( $p = 0.01$ ).

**CONCLUSION:** Our results reveal the deleterious impact of the reorganization during the hospital moving on the CRBSI incidence rate, and the possible implication of inexperienced team of nurses.



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