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Does Hand Hygiene Surveillance Reduce Positive Blood Cultures in Dialysis Clinics?

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Background: Antibiotic resistant bacteria are a growing problem in hemodialysis (HD) and the Centers for Disease Control (CDC) considers inadequate hand hygiene an important contributor. 1,2 Hand hygiene is a key means to prevent infection and improve patient care. 3 Here we explore the association between staff surveillance with respect to hand hygiene and frequency of blood cultures with antibiotic resistant bacteria.

Methods: In 12 HD facilities we recorded 8 items related to hand hygiene during monthly Environment of Care (EOC) rounds between the years 2010-13. Hand hygiene scores were normalized to the number of staff in the respective HD clinic and expressed as number of monthly citations per staff member. We also recorded the number of blood cultures positive for bacteria listed in Table 1.

Table 1.

C. difficile	Neisseria Species
Campylobacter Species	Candida Species
Enterococcus Species	P. aeruginosa
Salmonella Species	MRSA
S. pneumoniae	VRSA
S. pyogenes	

Results: Out of 576 months we performed 540 EOC rounds (93%). The number of citations related to hand hygiene decreased in the 4-year observation period (Table 2). This decline was paralleled by a decline in the number of blood cultures testing positive for pathogens in Table 1.

Table 2. Number of citations and positive blood cultures. Data are expressed as grand mean (range) of 12 HD clinics in the respective calendar year.

Variable	2010	2011	2012	2013
Citations	1.83 (0.24 to 6.47)	1.08 (0.08 to 3.01)	0.78 (0.12 to 3.28)	0.66 (0 to 1.75)
Positive blood cultures	3.83 (0 to 15)	3.75 (0 to 11)	4.67 (0 to 10)	3.0 (0 to 7)

Discussion: While we cannot derive a cause-effect relationship from these observational data, our study indicates that surveillance of hand hygiene may result in a lower rate of citations and may eventually translate into fewer positive blood cultures.

References:

- 1) Boyce et al; Infect Control Hosp Epidemiol 23 (2002).
- 2) 2004 JCAHO National Patient Safety Goals Approved. Jt Comm Perspect 23:1-3 (2003)
- 3) http://www.jointcommission.org/assets/1/18/hh_monograph.pdf (2014)

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