



# Prevention of dialysis-associated infection events

Effect of a multimodal prevention strategy on dialysis-associated infection events in outpatients receiving haemodialysis

**A multimodal strategy combining infection surveillance, hand hygiene compliance observations, training of aseptic procedures, and patient education resulted in a significant decrease in dialysis-associated infection events (DAIE) among outpatient haemodialysis patients.**

## BACKGROUND

DAIE pose a significant health risk for haemodialysis patients, since they are more vulnerable to infections due to frequent manipulation at vascular access sites. The bloodstream infection (BSI) rate in US dialysis patients was 0.64 per 100 patient-months. When a central venous catheter (CVC) was used for dialysis the rate was as high as 2.16. Previous studies have recommended avoiding

catheters, but when catheters are unavoidable, effective prevention measures are crucial. Limited evidence exists on infection prevention in maintenance haemodialysis.

**This study aimed to assess the impact of a comprehensive prevention strategy on dialysis-associated infection events.**

## RESULTS

### Interventions

- Infection surveillance with regular feedback
- Hand hygiene compliance observations with regular feedback
- Intensified teaching in aseptic procedures
- Patient flyer

Incidence rates per 1000 dialysis from  
**control → intervention period**

		BSI	IAS	LARI	Σ DAIE
Vascular access site	AVF	0 → 0	0.16 → <b>0.05</b>	0.03 → 0.01	0.19 → <b>0.07</b>
	AVG	0.02 → 0.02	0.41 → 0.17	0.15 → 0.08	0.58 → 0.27
	CVC	0.25 → <b>0.09</b>	1.33 → <b>0.59</b>	0.78 → <b>0.32</b>	2.36 → <b>1.01</b>
	Σ	0.06 → 0.03	0.44 → <b>0.18</b>	0.21 → <b>0.1</b>	0.71 → <b>0.31</b>

Statistically significant reduced incidence rates are **bold**.

AVF = arteriovenous fistula    AVG = arteriovenous graft    CVC = central venous catheter  
BSI = bloodstream infection    IAS = intravenous antimicrobial start  
LARI = local access related infection    DAIE = dialysis-associated infection events

## CONCLUSION

- Significant reduction from 0.71 DAIE per 1000 dialysis in the control period to 0.31 in the intervention period
- **Highest preventive effect** in patients with CVC: relative risk reduction of almost 60%
- Increase in hand hygiene compliance from 58% to 65%

