

# Impact of a training program on the care of peripheral and central lines: assessment with 2 point prevalence studies

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## INTRODUCTION AND PURPOSE

- Data on bedside practice in prevention of infection of central and peripheral venous lines (VL) in a general institution are scarce. Information is mainly from ICU patients, and few studies compare catheter care in ICU patients and non-ICU patients.
- The **purpose** of our study was to evaluate the efficacy of bedside point prevalence studies to assess compliance with the recommendations provided during a campaign to promote good care of VLs.

## MATERIAL AND METHODS

- ❖ The study was performed in a general referral hospital.
- ❖ Two point prevalence studies were performed (January 2013 and September 2014).
- ❖ A nurse visited all adult patients who were admitted at the time of the visit and had  $\geq 1$  peripheral or central VLs inserted at the time of the visit.
- ❖ After the first study, an educational intervention was implemented (an interactive on-line teaching program, distribution of pocket leaflets, posters in all nursing units, and Talks to small groups of nurses during the different shifts).

### A venous line was considered adequate if:

- ✓ Registration of insertion date
- ✓ Registration of dressing change date
- ✓ Registration of administration set replacement date
- ✓ Registration of daily surveillance
- ✓ Connectors locking all lumens and hubs
- ✓ There was a need for a VL on the study day
- ✓ No evidence of local signs of infection at the catheter entry site



## RESULTS

Study 1 vs Study 2: Patients visited 753 vs 582; patients with one or more VLs on the study day: 653 (86.7%) vs 585 (85.8%)  $p=0.77$ ;  
Nº of catheters implanted at the time of the visit: 797 vs 678 ( $p=0.64$ )

ICU (patients)				NON-ICU (patients)				
	STUDY 1	STUDY 2	STUDY 2		STUDY 1	STUDY 2	STUDY 2	
	104	52 (6.9)	46 (6.7)	83	693	701 (93.1)	636 (93.2)	595
CVL	45 (43.2)			38 (45.7)	98 (14.1)			85 (14.2)
PL	59 (53.7)			45 (54.2)	594 (85.7)			511 (85.8)

Parameters indicating good infection control between Study 1 and Study 2 and ICU and non-ICU patients

Parameter	ICU (%) Study 1-Study 2	P	Non-ICU (%) Study 1-Study 2	P
Registration of insertion date	+3.9% (86.5%-90.4%)	0.42	+8.9% (35.6%-44.5%)	<0.001
Registration of daily surveillance	+3.8% (96.2%-100%)	0.07	0% (98.0%-98.0%)	0.98
Registration of dressing change date	+8.2% (89.4%-97.6%)	0.04	+8.5% (33.0%-41.5%)	0.002
Registration of set replacement date	+2.8% (53.8%-56.6%)	0.20	+4.0% (15.3%-19.3%)	0.78
Use of connectors (split-septum) in all hubs	+3.9% (91.3%-95.2%)	0.41	+8.6% (81.5%-90.1%)	<0.001
Necessary lines	+19.0% (70.2%-89.2%)	0.002	+15.3% (78.1%-93.4%)	<0.001

## CONCLUSION

- ✓ An educational bundle for nurses caring for patients with central or peripheral VLs substantially increases compliance with care recommendations, particularly in non-ICU patients.
- ✓ Simple bedside surveillance-based point prevalence studies are an effective means of evaluating the impact of the interventions implemented.