

PERIPHERAL INTRAVENOUS CATHETERS: DWELL TIME AND RELATED COMPLICATIONS

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BACKGROUND AND PURPOSE

PIV Dwell Time Standards

- Recently, the 2011 Infusion Nursing Standards of Practice recommended considering replacing peripheral intravenous catheters (PIVs) when clinically indicated
- Little published evidence exists to help nurses determine the maximum time PIVs can remain indwelling to minimize occurrence of complications

The purpose of this study was to determine if a PIV that remained in place for > 96 hours would have the same complication rate as one that remained in place for 72 - 96 hours

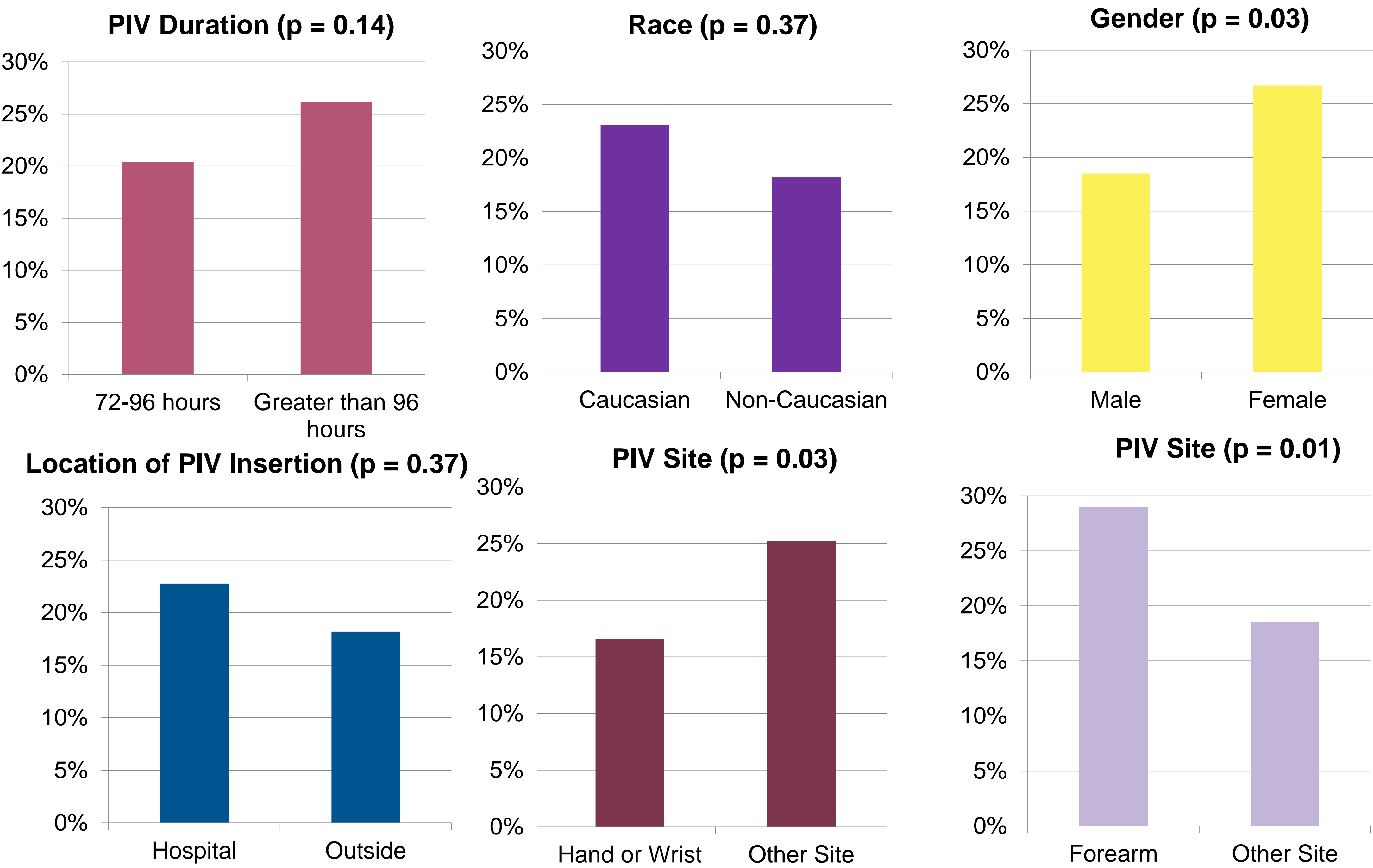
Methods

- All patients were from a 176-bed, Magnet-designated, community hospital with no IV team
- To be included in the study, patients must have had a PIV that remained in place for at least 72 hours
- Data was collected via chart review
- Nursing documentation had to include PIV start and stop time, and reason for discontinuation

Patient Demographics (n = 490)

Male, n (%)	254.0 (51.8)
Caucasian, n (%)	424.0 (86.5)
Age in years, mean (SD)	70.4 (14.1)

Nearly one-quarter of PIVs had a complication (110/490). PIVs that were indwelling greater than 96 hours had the **same complication rate** as those indwelling for 72 – 96 hours. Significant predictors of complication rate were gender, PIV site, and age. Those with complications were older (74 years old, versus 69 years old for no complications, $p < 0.01$).



PREDICTORS OF PIV COMPLICATIONS

PIV CHARACTERISTICS

Variable	n (%)
Complication (n = 110)	Infiltration 67 (60.9)
	Leak 21 (19.1)
	Occlusion 11 (10.0)
	Phlebitis 11 (10.0)
Site	Antecubital 150 (30.6)
	Forearm 183 (37.3)
	Hand 111 (22.7)
	Wrist 46 (9.4)
Dwell Time (hours)	72 – 96 314 (69.1)
	96 or more 176 (30.9)
Origin	Inside Hospital 457 (93.3)
	Outside Hospital 33 (6.7)

CONCLUSION

Nursing Implications

- This study suggests that an intact catheter does not need to be removed at a specific time interval. This change has the potential to reduce patient discomfort and resource use (clinician time and product costs)
- The results are clinically relevant and support the Infusion Nurses Society 2011 Standards of Practice
- Future studies should consider evaluating the effect of patient condition, type of infusate, stabilization device and nurse skill level to the relationship between dwell times and complication rates



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