

USE OF MIDLINE (EXTENDED DWELL PERIPHERAL IV) DEVICE IMPROVES PATIENT SAFETY AND SAVES COSTS COMPARED TO PICCs



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PURPOSE

Las Palmas Medical Center (El Paso, Texas) sought an efficacious alternative to PICCs for patients who don't require them because:

- Central IV lines have a much higher risk of central line-associated bloodstream infections (CLABSIs) than other IV lines. Patients should not be endangered by the unnecessary placement of a PICC, if there is a safer alternative that is at least as effective.
- Unnecessary central lines also raise costs, because CLABSIs are expensive to treat, are typically not reimbursed, and add significantly to patients' length-of-stay.

PROJECT DESCRIPTION



The hospital adopted an innovative, power-injectable extended-dwell peripheral IV (POWERWAND[®], Access Scientific, Inc.), for use whenever initial assessment indicated IV access could be safely and effectively delivered without a PICC.

The extended-dwell peripheral IV can be left in place for up to 29 days. At 3.1 inches, it is technically a midline catheter. Midlines

have the lowest published bloodstream infection rate of all inpatient vascular access devices.

MAJOR OUTCOMES

- Adoption of the extended-dwell peripheral IV led to a substantial reduction in the CLABSI rate.
- The extended-dwell peripheral IV was used in ~43% of cases.
- The percentage of PICCs used was substantially reduced in the first five months of 2012, compared to PICC use in 2011.

Clinical comparison of PICCs vs. Extended Dwell Peripheral IV January–May 2012

	PICC Lines	Extended Dwell Peripheral IV
Bloodstream Infections	CLABSI rate = 3.58/1,000 3 total infections 838 line days	CLABSI rate = 0 No CLABSIs 477 line days
Occlusions	3 (838 line days)	0 (477 line days)
Other complications	0	4 minor complications in 4 patients
Blood draw	Blood could be drawn through 99% of PICCs for entire length-of-stay	Blood could be drawn through 60% of peripheral IVs for entire length-of-stay

Financial results, using extended-dwell peripheral IVs instead of PICCs:

- \$20,119 in actual material-cost savings over 4 months
- \$72,000 in avoided infection-treatment costs over 5 months
- Projected annual savings of \$233,157 due to material-cost savings and avoided infection-treatment costs

CONCLUSIONS / IMPLICATIONS FOR PRACTICE

- The contrast in bloodstream infections and occlusions (0 vs. 3 in both cases) underlined the infection-control advantages of the extended dwell peripheral IV vs. PICCs.
- Complications associated with the new peripheral IV were restricted to 4 patients out of 111 (3%). These 4 patients were improperly assessed upon admission and should have received PICCs.
- The ability to draw blood through 60% of the extended-dwell peripheral IVs through the entire length-of-stay is well above the reported average for peripheral IVs.
- The midline/extended dwell peripheral IV was a safer, cost-effective alternative to PICCs when indicated.
- The findings underscore the value of a new peripheral IV/midline alternative to PICCs, and the importance of proper assessment of each patient upon hospital admission for the type of catheter line, to enhance patient safety and reduce cost of care.



LIMITATIONS

Prospective observational study following interventions.
Not a randomized controlled trial.

FUNDING SOURCE

None

DISCLOSURE STATEMENT

Access Scientific, Inc. (San Diego, CA) is reimbursing the author for travel and hotel expenses for the conference.