

## Nurse Management of Radial Arterial Lines: Evidence-Based Practice

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### ABSTRACT

**Background:** Radial arterial lines (RALs) are used to obtain precise measurement and provide continuous blood pressure monitoring of critically ill patients. Critical care nurses are the primary responsible clinician for maintaining the safety and effectiveness of radial arterial lines (RALs). Gaps exist in the practice literature about tools that help nurses stabilize the wrist joint for safe maintenance of RALs. Local Problem: The purpose of this study was to improve the quality and safety of RALs by establishing use, safety, and preferences of critical care nurses for tools that help them manage RALs.

**Methods/Intervention:** A mix method approach provided in-depth qualitative and quantitative data in two phases: Phase I: Survey of critical care nurse management of RALs and Phase II: a Focus Group of Critical Care Nurse Experts exploring the use, safety, and perception of tools to manage RALs.

**Results:** Nurses reported that visual inspection of the insertion site of an RAL (97.1%); adjustment of the wrist angle (98.5%) and stabilization of the wrist (88.2%) were critical areas for safe management. Nurses voiced concern about the lack of the availability of adequate tools to manage RAL.

**Conclusions:** Too often the nurses' jury rig devices to stabilize a patient's wrist and the nurses reported frequent adverse events such as infections, skin breakdown, and inaccurate blood pressure measurements. These outcomes are costly for hospitals and patients. Nurses reported preference for flexible/bendable arm boards, but they were reported often not available. Nurses need up-to-date tools to perform best practices that keep patients safe.

**Keywords:** Radial arterial lines, Quality improvement, Nurse management

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