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## **Publication: Title and Journal/Conference**

“Implementation of the Theory of Planned Behavior to Promote Compliance with a Chlorhexidine Gluconate Protocol.”

(2017). *Journal of the Association of Vascular Access*. 22(2). 56-62.

## **Background**

- Honor Health, Scottsdale Arizona, is a community ED with 58,000 annual visits and continued blood culture contamination rates exceeding the 3% CAP benchmark.
  - Re-education of staff by the education specialist (huddles, meetings, routine in-services and competency assessments) regarding blood culture policy and procedure, posters/ signs not effective at reducing contamination rates.
- Blood cultures are the primary diagnostic procedure to identify bacteremia. Reduction of blood culture contamination prevents patients from receiving unnecessary medications (and additional diagnostic testing), prevents increased healthcare costs and extended hospital stays.

## **Methodology/Study Design**

- Quantitative descriptive correlational project (with IRB approval) provided by the theory of planned behavior (TPB) to examine the barriers to following procedural guidelines to cleanse venipuncture sites with a chlorhexidine gluconate (CHG)/isopropyl alcohol (ALC) product prior to venipuncture.
- Quality improvement study to observe if increased availability of CHG/ALC products in the emergency department (ED) would reduce blood culture contamination rates.
- Blood culture contamination rates from prior 3 quarters with alcohol compared to pilot CHG/ALC implementation rates via ED convenience sampling.
- College of American Pathologists (CAP) standard for blood culture contamination rates is <3% for laboratory testing.

## **Experiment**

- Alcohol prep pads were removed from the ED and replaced with CHG/ALC product with similar packaging.
  - CHG/ALC was placed in procedure trays and bedside carts within the ED.
- Blood culture contamination rates monitored by the laboratory for duration of the pilot project to determine improvement.
- TPB utilized to empirically identify factors associated with non-compliance with an expected behavior.
  - Identify whether CHG/ALC product availability impacted use/compliance.

## Results/Conclusions

- **First two weeks of pilot project resulted in a blood culture contamination rate reduction of 4.5% to 1.5%, with rates remaining as low as 1.9% in the following month.**
- Placement of readily available CHG product improved patient safety by reducing the rates of blood culture false positives.
- Author notes that product change alone is not enough to achieve sustained contamination rate reduction. Staff also need to understand the “why” behind appropriate blood culture collection - and be provided with continual education, collegial discussion and identifying champions for practice change.

## Limitations

- Duration of study and blood culture monitoring period (Dec. 15, 2015- Feb. 29, 2016, 1152 blood cultures drawn) - is this convenience sample representative?
- Alcohol pads available in other areas of the hospital and potentially could have been re-introduced in the ED during the pilot period.
- Sustainability of results unknown given short study period.