

# Cost-effectiveness of ANTT®-approved Secure Barrier and Dressing (UltraDrape™) for UGPIV Insertions

Nancy Moureau, PhD, RN, CRNI, CPUI, VA-BC  
 PICC Excellence, Inc., Hartwell, GA

Presented at the Association for Vascular Access Annual Scientific Meeting, September 16-19, 2021, Orlando, FL

## Purpose and Background

This cost analysis examines the economic advantages of the Aseptic Non Touch Technique (ANTT®) and use of UltraDrape™ a transparent securement dressing that facilitates separation of probe and gel from the skin during ultrasound-guided peripheral intravenous (UGPIV) insertions. UltraDrape recently received a safety evaluation by ANTT® organization (www.ANTT.org).

### Background

Between 60% and 90% of hospitalized patients receive peripheral intravenous catheters (PIVCs).<sup>1</sup> Yet, PIVC failure rates of 33%-69% have been reported and a recent study found that 18% of seniors and 17% of adult patients required 5-9 PIV insertions during their hospitalization, with 4% of adults requiring 10 or more PIVs.<sup>2</sup> Each failure costs supplies and time. As more patients are identified as difficult access, replacement of catheter failures requires more advanced skills and ultrasound-guided insertions involving specific supplies and training to safely facilitate successful insertion that can result in higher cost to the facility.

ECRI's Top 10 Patient Safety Concerns 2021 recognizes peripheral vascular harm and recommends use of sterile technique and components.<sup>3</sup> Because "sterile" is difficult to achieve at the bedside, outside of a controlled environment, aseptic technique is used, though not always clearly defined. Aseptic Non Touch Technique (ANTT®) is an international standard based on the unique theory and model of Key-Parts and Key-Site Protection.<sup>4</sup> UltraDrape was recently evaluated as "an effective solution" for improving aseptic insertions "using the more economical, but equally safe and effective Standard-ANTT approach" for UGPIV procedures.<sup>5</sup> (Details on back page.)

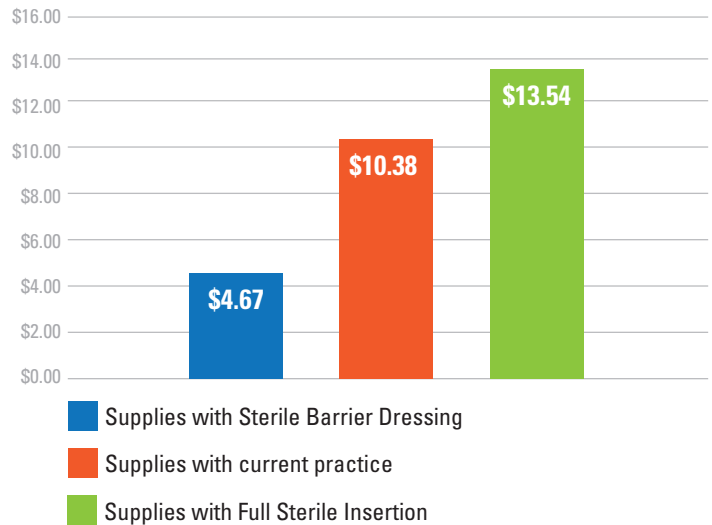
## Conclusions

Given the ubiquity of PIVC use with ultrasound guidance and in association with healthcare acquired infection, efficiency makes attention to these procedures vital for safe practices, time and cost savings. Products that reduce both risk of infection and overall procedure costs make sense. UltraDrape, a UGPIV Barrier and Securement dressing, reduces infection risk by keeping the disinfected puncture area clean, gel free, and dry, while reducing UGPIV insertion supply costs by 67% utilizing the ANTT procedure (\$4.67 vs \$13.54).



## Results

### Cost Comparison of Supplies for 3 PIV Insertion Techniques



Supplies with Sterile Barrier Dressing	Supplies with Current Practice	Supplies with Full Sterile Insertion
<b>Total \$4.67</b>	<b>Total \$10.38</b>	<b>Total \$13.54</b>
UltraDrape Sterile Barrier and Securement Dressing	US Probe Cover	Sterile Probe Cover
Gel Single-Use Packet non-sterile	Gel Single-Use Packet non-sterile (assessment)	Gel Single-Use Packet non-sterile (assessment)
Skin Marker	Gel Sterile	Gel Sterile
Disposable Tourniquet	IV Start Kit with Alcoholic Chlorhexidine 3ml	IV Start Kit or IGPIV Kit with Alcoholic Chlorhexidine 3ml
Alcoholic Chlorhexidine 3ml	Alcoholic Chlorhexidine 3ml	Alcoholic Chlorhexidine 3ml
Sterile Gauze 2x2	Sterile Gauze 4x4	Sterile Gauze 4x4
Sodium Chloride Flush	Sodium Chloride Flush	Sterile Gloves
		Sterile Drape
		Sodium Chloride Sterile Peel Packet

The economic analysis and comparison of supplies commonly used for current UGPIV procedures (\$10.38 versus \$4.67) resulted in a 55% reduction in cost by using ANTT and the barrier dressing cost (\$4.67). There was a 67% reduction over the cost of a full sterile barrier UGPIV kit using ANTT and the UGPIV dressing (\$13.54 versus \$4.67).



## More About ANTT

ANTT is a unique, standardized approach to aseptic practice that has been shown to improve patient outcomes and reduce the incidence of healthcare acquired infections. Overseen by the Association for Safe Aseptic Practice (The-ASAP; [www.antt.org](http://www.antt.org)), ANTT seeks to standardize aseptic technique by reducing the variables in aseptic practice across large clinical workforces, thereby supporting improvements in patient safety and infection rates.

In September 2019, the Association for Vascular Access published a Guidance Document on the need to standardize the critical clinical competency of insertions using aseptic, sterile, and clean techniques with the ANTT standard.

Most recently, the Infusion Nurses Society has included the ANTT framework as a dedicated standard in its 2021 Infusion Therapy Standards of Practice. To maximize efficiency and ease of adoption, there are two types of ANTT:

- **Surgical-ANTT® (aka full sterile technique):** Used for clinically invasive procedures where achieving asepsis is technically difficult and/or procedures are long in duration, e.g. surgery, central line insertion, urinary catheterization. Surgical-ANTT® typically involves a combination of standard precautions, full barrier precautions and Critical Aseptic Field management (use of a sterilized drape).
- **Standard-ANTT® (aka "aseptic" or clean):** Used for clinically invasive procedures where achieving asepsis is technically straightforward and short in duration, e.g. peripheral cannulation or intravenous maintenance. Standard-ANTT® typically involves a combination of standard precautions, a General Aseptic Field, and Key-Parts protected by Micro Critical Aseptic Fields and Non-Touch Technique.

ASAP evaluators noted that UltraDrape very effectively supports a Standard-ANTT approach, which is the most common technique used for PIV insertions. This is important because unnecessarily utilizing a full sterile technique adds complexity and cost to the procedure, without improving outcomes.

For more information, visit [www.antt.org](http://www.antt.org)

## References

1. Helm RE, Klausner JD, Klemperer JD, Flint LM, Huang E. Accepted but unacceptable: Peripheral IV catheter failure. *J Infus Nurs.* 2015; 38(3): 189-203.
2. Tripathi S, Gladfelter T. Peripheral intravenous catheters in hospitalized patients: Practice, dwell times, and factors impacting the dwell times: A single center retrospective study. *J Vasc Access.* 2021 Mar 30:11297298211000874.
3. ECRI. Top 10 Patient Safety Concerns 2021: Special Report. Plymouth Meeting, PA: ECRI. 2021: 20-21.
4. Rowley S, Clare S. ANTT: a standard approach to aseptic technique. *Nursing Times.* 2011;107(36):12-14. <https://www.nursingtimes.net/clinical-archive/infection-control/antt-a-standard-approach-to-aseptic-technique-09-09-2011/>
5. The Association for Safe Aseptic Practice. Product Evaluation Programme (PEP): Evaluation of The ULTRA DRAPE™ Ultrasound-Guided Peripheral Intravenous Access (UGPIV) Barrier and Securement Device. Confidential report to Parker Laboratories. April 2021.

## Acknowledgement

Special thank you to the teams at Sharp Memorial Hospital, Sharp Chula Vista Medical Center, and Sharp Grossmont Hospital for participating in this valuable research.

Dr. Moureau, a vascular access specialist, is Chief Executive Officer, PICC Excellence, Inc., in Hartwell, Georgia; Adjunct Associate Professor at Griffith University, and serves with the Alliance for Vascular Access Teaching and Research (AVATAR) Group, also at Griffith University, Queensland, Brisbane, Australia. She can be reached at [nancy@piccexcellence.com](mailto:nancy@piccexcellence.com)