

11-2014

# Effect of Silver-Alloy Urinary Catheters in Reducing the Rate of CAUTI's in Patients Requiring Short-term Catheterization: A Review of the Literature

Courtney McKee

*West Chester University of Pennsylvania*

Devon Williams

*West Chester University of Pennsylvania*

Follow this and additional works at: [http://digitalcommons.wcupa.edu/nurs\\_stuwork](http://digitalcommons.wcupa.edu/nurs_stuwork)



Part of the [Critical Care Nursing Commons](#)

---

## Recommended Citation

McKee, C., & Williams, D. (2014). Effect of Silver-Alloy Urinary Catheters in Reducing the Rate of CAUTI's in Patients Requiring Short-term Catheterization: A Review of the Literature. Retrieved from [http://digitalcommons.wcupa.edu/nurs\\_stuwork/2](http://digitalcommons.wcupa.edu/nurs_stuwork/2)

This Conference Proceeding is brought to you for free and open access by the Nursing at Digital Commons @ West Chester University. It has been accepted for inclusion in Nursing Student Work by an authorized administrator of Digital Commons @ West Chester University. For more information, please contact [wccressler@wcupa.edu](mailto:wccressler@wcupa.edu).



Effect of Silver-Alloy Urinary Catheters in  
Reducing the Rate of CAUTI's in Patients  
Requiring  
Short-term Catheterization:

A Review of the Literature  
Courtney McKee, SN WCU

John Williams, SN WCU



# Conflicts of Interest

- None
- Products mentioned in this presentation were used in the studies cited.

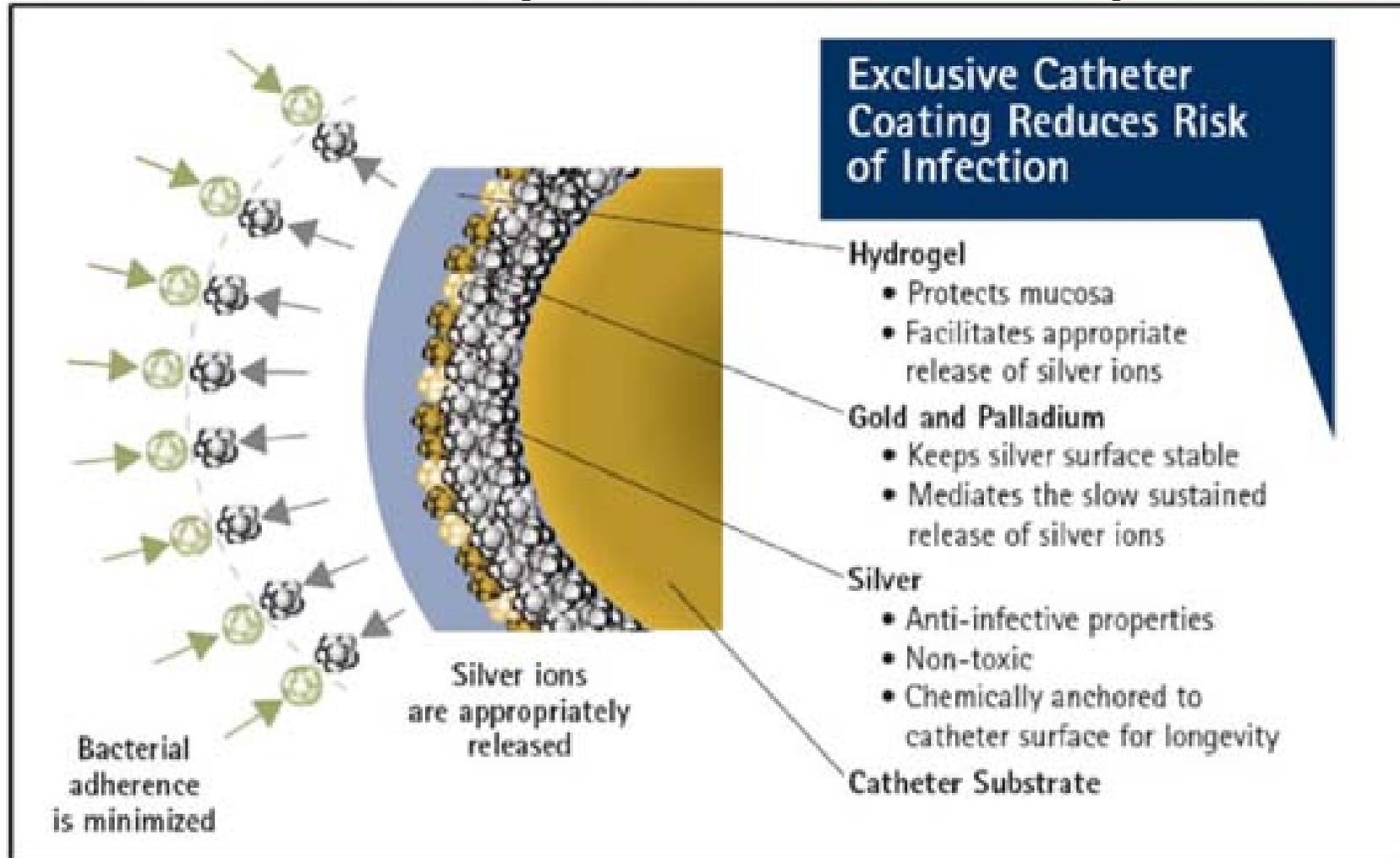
# Objectives

- To examine the effectiveness of silver-alloy urinary catheters in preventing CAUTI.
- To evaluate the implementation of standard urinary catheter care with use of any catheter type.
- To develop a literature review of current peer reviewed manuscripts.

# Purpose

- determine the effectiveness and economic benefit of silver-alloy catheters
- compare silver-alloy to standard urinary catheters
- assess implementation of standard preventative care in conjunction with the use of silver catheters to prevent CAUTI's

# Silver-alloy Catheter: Properties





# Background/significance

- Catheter-associated urinary tract infections (CAUTI's)
  - major healthcare concern
  - harmful to patient health
  - economically burdensome
- Silver-alloy catheter use



# Methods

- Database search: CINAHL
- Search terms:  
silver catheters, prevent, CAUTI, and infection.
- Inclusion criteria
  - Population: patients requiring catheterization
  - Published 2008-2014
  - Research articles only



# Results

- Six peer reviewed articles met the criteria
- Effectiveness of Silver-alloy catheters in reducing CAUTI rates– 4 articles
- Cost effectiveness of Silver-alloy catheters – 4 articles
- Necessity of using standard preventative nursing interventions in addition to silver-catheter use- 2 articles



# Results

- Silver-alloy catheter use in reducing CAUTI rates
  - Findings varied on the effectiveness of silver-alloy catheters in reducing CAUTI rates among catheterized patients



# Results

- Cost effectiveness
  - Findings varied
    - patients
    - health care institutions



# Results

- Need for standard catheter care with use of any catheter type
  - standard prevention measures confirmed
  - proper catheter care
  - antimicrobial properties of silver should not be solely relied upon



# Limitations

- Various assessment techniques
- Limited publications in nursing journals
- Limited new research within the past 5 years
- Only 4 articles reviewed



# Conclusions

- No current determination can be made on the use of silver catheters in clinical practice
- More research
  - effectiveness of silver-alloy catheters in reducing CAUTI rates
  - economic benefits of silver-alloy catheters
- Adherence to institution-based policies and procedures
  - proper catheter placement
  - Proper catheter care



# Future Directions

- Additional literature review
- Conduction of more in-depth research trials
- All policies/procedures must include standard catheter care



# Research Lessons Learned

- Requirement
- Article retrieval
- Article selection
- Database search skills

# References

- Beattie, M., & Taylor, J. (2011). Silver alloy vs. uncoated urinary catheters: a systematic review of the literature. *Journal of Clinical Nursing*, 20, 2098-2108. <http://dx.doi.org/10.1111/j.1365-2702.20103561.x>
- Chenoweth, C., & Saint, S. (2013). Preventing catheter-associated urinary tract infections in the intensive care unit. *Critical Care Clinic*, 19-32. <http://dx.doi.org/10.1016/j.ccc.2012.10.005>
- Fink, R., Gilmartin, H., Richard, A., Capezuti, E., Boltz, M., & Wald, H. (2012). Indwelling urinary catheter management and catheter-associated urinary tract infection prevention practices in nurses improving care for healthsystem elders hospitals. *American Journal of Infection Control*, 40(8), 715-720. doi:10.1016/j.ajic.2011.09.017
- Kassler, J. & Barnett, J. (2008). A rehabilitation hospital's experience with ionic silver foley catheters. *Urologic Nursing*, 28(2), 97-99.
- Kohan, C., Bekui, A., & Boyce, J.M. (2008). Utilizing silver technology to reduce catheter-related urinary tract infections. *American Journal of Infection Control*, 29(5).
- Pickard, R., Lam, T., MacLennan, G., Starr, K., Kilonzo, M., Walton, K., Buckley, B., Glazener, C., Boachie, C., Burr, J., Norrie, J., Vale, L., Grant, A., & N'Dow, J. (2012). Types of urethral catheter for reducing symptomatic urinary tract infections in hospitalised adults requiring short-term catheterisation: multicenter randomised controlled trial and economic evaluation of antimicrobial- and antiseptic-impregnated urethral catheters. *Health Technology Assessment*, 16(47). doi:10.3310/hta16470
- Ritter, J., Thomas, L., Lederer, J., & Jarvis, W.R. (2013). Effectiveness of a silver-alloy catheter and hydrogel coated urinary catheter on symptomatic catheter-associated urinary tract infections. *American Journal of Infection Control*, 41(6), S143-S144.
- Saint, S., Meddings, J.A., Calfee, D., Kowalski, C.P., & Krein, S.L. (2009). Catheter-associated urinary tract infection and the medicare rule changes. *Ann Intern Med*, 150(12), 877-884.
- Tsuchida, T., Makimoto, K., Ohsako, S., Fujino, M., Kaneda, M., Miyazaki, T., Fujiwara, F., & Sugimoto, T. (2008). Relationship between catheter care and catheter-associated urinary tract infection at japanese general hospitals: a prospective observational study. *International Journal of Nursing Studies*, 45, 352-361. doi:10.1016/j.ijnurstu.2006.10.006