

## **Creatinine Trends in Transcatheter Aortic Valve Replacement Patients.**

Sydney Pickering

Taryn Samet MD

James K. Wu MD

Lehigh Valley Health Network, james.wu@lvhn.org

Follow this and additional works at: <https://scholarlyworks.lvhn.org/research-scholars-posters>

**Let us know how access to this document benefits you**

---

### **Published In/Presented At**

Pickering, S., Samet, T., Wu, J., (2017, July, 31) *Creatinine Trends in Transcatheter Aortic Valve Replacement Patients*. Poster presented at: LVHN Research Scholar Program Poster Session, Lehigh Valley Health Network, Allentown, PA.

This Poster is brought to you for free and open access by LVHN Scholarly Works. It has been accepted for inclusion in LVHN Scholarly Works by an authorized administrator. For more information, please contact [LibraryServices@lvhn.org](mailto:LibraryServices@lvhn.org).



# Creatinine Trends in Transcatheter Aortic Valve Replacement Patients

Sydney Pickering, Taryn Samet, James Wu, MD  
Department of Surgery, Division of Cardiothoracic Surgery  
Lehigh Valley Health Network, Allentown, Pennsylvania

## INTRODUCTION

- Omnipaque contrast dye is used for visualization in patients undergoing transcatheter aortic valve replacement (TAVR)
- Dye may impinge on the patient's kidney health
- A previous study reported a wide range of 15% to 57% of the TAVR patients developed acute kidney injury after the TAVR procedure<sup>1</sup>

## OBJECTIVE

- This study seeks to assess the creatinine level of patients over time and analyze the effects of the TAVR procedure on kidney function

## METHODS

### Classified

- This was a retrospective single-center observational study
- Included 356 patients with severe aortic stenosis who underwent the TAVR procedure between January 2015-June 2017 at the Lehigh Valley Health Network

### Reviewed

- Electronic medical records were used to assess patient creatinine levels before and after surgery and record the amount of contrast dye used in the TAVR procedure

### Analyzed

- Descriptive statistics were used to evaluate the relationship between kidney function and the TAVR procedure

## OUTCOMES

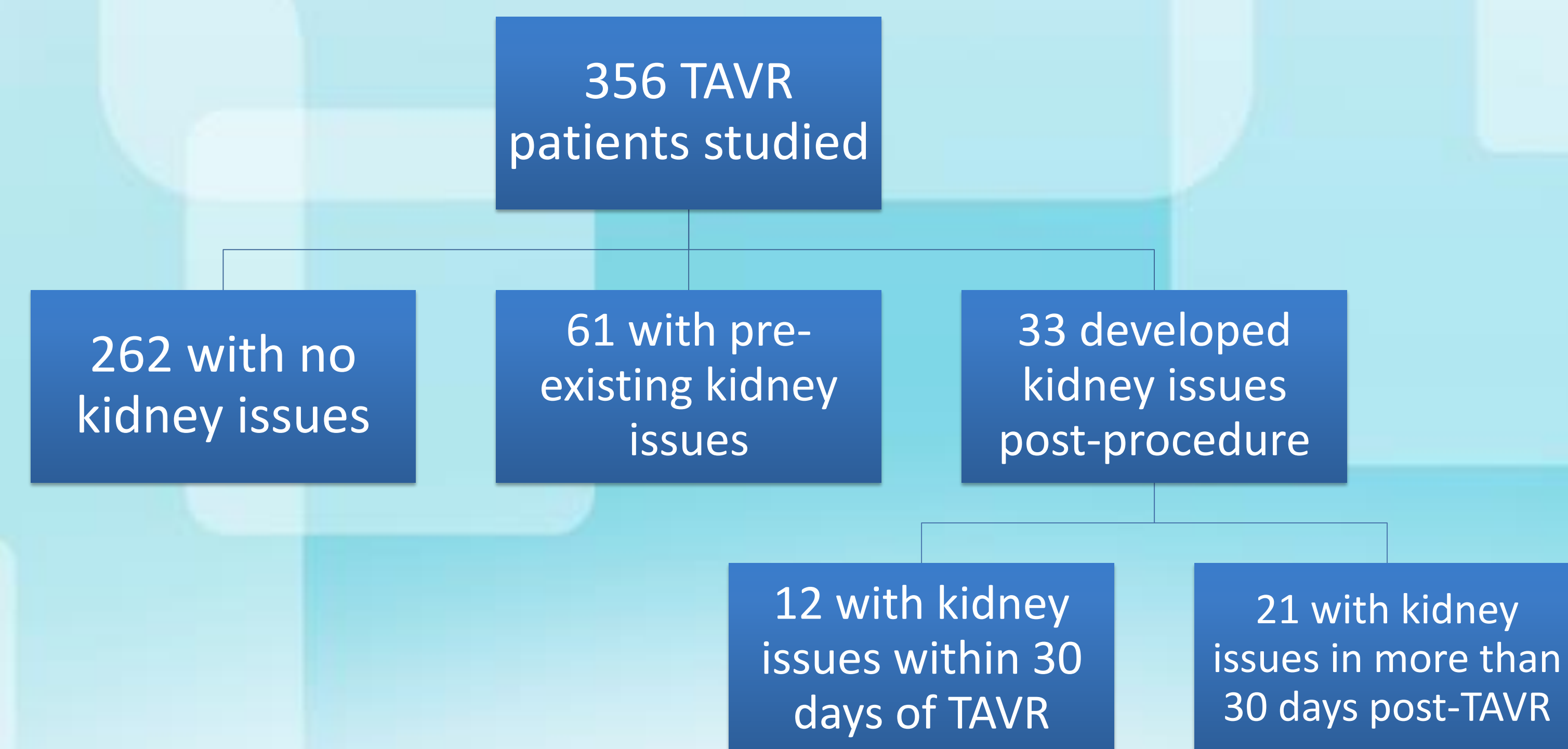


Figure 1: Flowchart Categorizing Kidney Issues in TAVR Patients

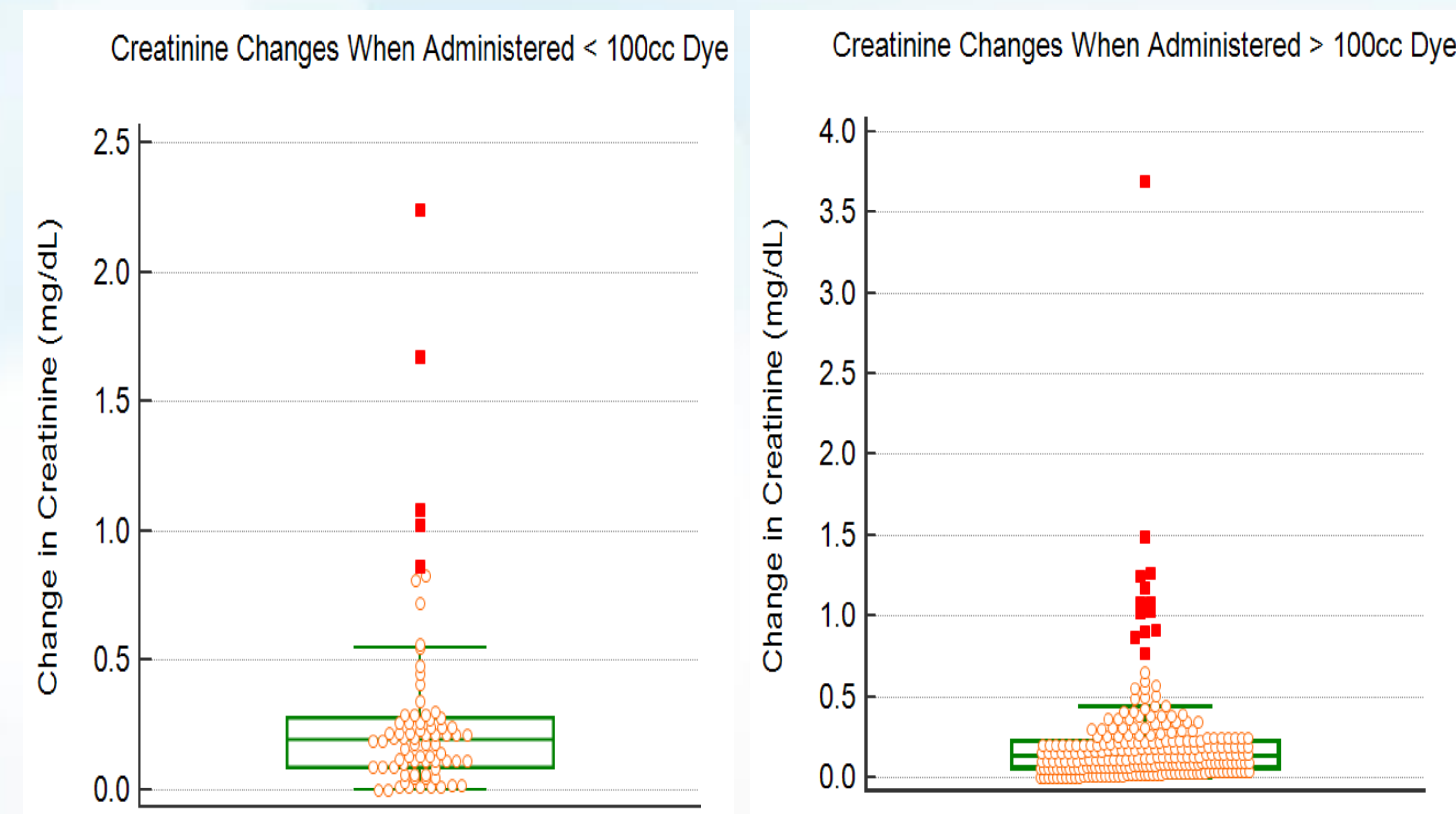


Figure 2: Box Plot of Changes in Creatinine Levels Based on the Concentration of Contrast Dye Administered

The box plots show the absolute value changes in creatinine levels from the pre-TAVR workup to the 2 days post-TAVR labs.

## RESULTS

- Patients with pre-existing kidney issues:
  - there was no statistical significance showing the patients who were given more dye had greater changes in pre to post procedural creatinine levels ( $p=0.5732$ ).
- Patients with no pre-existing kidney issues:
  - there was no statistical significance showing that patients who were given more dye were more likely to develop a kidney disease post-TAVR ( $p=0.3190$ ).
- Patients who developed a kidney issue:
  - there was no statistical significance showing the patients who were given more dye were more likely to develop a kidney disease within 30 days of the TAVR procedure ( $p=0.8122$ ).

## CONCLUSIONS

- This was a negative study, revealing no statistical significance that Ominpaque contrast dye injections correlate to post-TAVR kidney issues
- Although there is always some risk that patients develop chronic kidney disease or acute kidney injury from the procedure, the results suggest that the cardiac team should not deny patients as TAVR candidates because of the possible complications from using contrast dye
- Further research is recommended to assess the effects of other contrast dyes on kidney function and to extend the study to other tertiary hospitals.

Resources:

1. Cheungpasitporn, W., Thongprayoon, C., & Kashani, K. (2016). Transcatheter Aortic Valve Replacement: a Kidney's Perspective. *Journal of Renal Injury Prevention*, 5(1), 1–7.

© 2017 Lehigh Valley Health Network

610-402-CARE LVHN.org