

1-2020

Color-Changing Device to Improve Adherence to Foley Catheter Replacement Protocols and Reduce Urinary Tract Infection Frequency

Alexander Straus, MS

Thomas Jefferson University, alexander.straus@jefferson.edu

Kurt Hill

Thomas Jefferson University, kurt.hill@jefferson.edu

Bryn Cross

Thomas Jefferson University, bryn.cross@jefferson.edu

Jason M. Fields, MD

Thomas Jefferson University, jason.fields@jefferson.edu

Follow this and additional works at: https://jdc.jefferson.edu/si_des_2022_phase1



Part of the [Art and Design Commons](#), and the [Urology Commons](#)

[Let us know how access to this document benefits you](#)

Recommended Citation

Straus, MS, Alexander; Hill, Kurt; Cross, Bryn; and Fields, MD, Jason M., "Color-Changing Device to Improve Adherence to Foley Catheter Replacement Protocols and Reduce Urinary Tract Infection Frequency" (2020). *Phase 1*. Paper 1.

https://jdc.jefferson.edu/si_des_2022_phase1/1

This Article is brought to you for free and open access by the Jefferson Digital Commons. The Jefferson Digital Commons is a service of Thomas Jefferson University's [Center for Teaching and Learning \(CTL\)](#). The Commons is a showcase for Jefferson books and journals, peer-reviewed scholarly publications, unique historical collections from the University archives, and teaching tools. The Jefferson Digital Commons allows researchers and interested readers anywhere in the world to learn about and keep up to date with Jefferson scholarship. This article has been accepted for inclusion in Phase 1 by an authorized administrator of the Jefferson Digital Commons. For more information, please contact: JeffersonDigitalCommons@jefferson.edu.

Project Title: Color-Changing Device to Improve Adherence to Foley Catheter Replacement Protocols and Reduce Urinary Tract Infection Frequency

Author(s): Alexander Straus, BA, MS**; Kurt Hill, BS**; Bryn Cross, BA, BS**; Jason M. Fields, MD*

Background: Catheter associated urinary tract infections (CAUTI) are a major source of patient morbidity and mortality in healthcare settings and have a significant financial impact on the healthcare system. Many hospitals have clinical protocols in place to continually reassess the necessity of indwelling foley catheters and remove them if their use is no longer warranted. However, it is still common for indwelling foley catheters to be overlooked and remain in place, even after meeting criteria for removal. A design project was conducted that sought to improve adherence to clinical protocols, and reduce frequency of CAUTIs, by creating a color-changing device that alerts healthcare providers that an indwelling foley catheter should be reassessed for removal.

Methods: Interviews with key stakeholders in CAUTIs were conducted. This included a urologist, infectious disease expert and the nursing chair of a hospital's CAUTI unit. Results from an opinion survey assessing nursing staff's current practice and attitude toward CAUTI management was shared with the design research team. Utilizing, the "Design Thinking" framework, a color-changing alarm device, was conceived and prototyped.

Results: Interviews with stakeholders and the survey results shared with the design research team yielded similar insights; despite clinical protocols in place to systemize indwelling foley catheter assessment and removal, they are sometimes overlooked and remain in use longer than

is justifiable leading to CAUTIs. The interviewed stakeholders expressed interest in a device that could alert healthcare providers to reconfirm the necessity of any indwelling foley catheters.

Conclusions: The color-changing alarm device is still in the prototyping stage of development. Nonetheless, it is posed to target a crucial and underserved niche in the prevention of CAUTIs. Future steps include iteratively improving the prototype's design upon feedback from end-users and conducting in-hospital trials of the device to gather and compare protocol adherence and CAUTI frequency statistics.

Word Count: 299