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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

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.

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