Type of Research Application: T1 (Early Translation)

Tagging Medical Data Streams with Patient Photographs to Decrease Patient Misidentification Errors

A Preliminary Study Grant Proposal submitted to the Emory/Georgia Tech Healthcare Innovation Program (HIP) and the Atlanta Clinical and Translational Science Institute (ACTSI)

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ABSTRACT: The objective of the proposed work is to implement and test a novel technique of incorporating point-of-care digital photography with medical imaging studies to decrease patient misidentification errors and improve radiologists’ efficiency. Misidentification errors in medical imaging can lead to serious consequences. Despite use of the Joint Commission’s dual-identifier method before delivery of any healthcare, misidentification errors persist; these errors are particularly troublesome in patients, such as unconscious trauma victims, who cannot communicate identification information. We hypothesize that acquisition of digital photographs simultaneously with the acquisition of medical imaging examinations could lead to a powerful additive identification tool and help prevent mislabeling of imaging examinations, thereby resulting in fewer medical errors. In addition, digital photographs may lead to improvement in the diagnostic interpretation of medical imaging examinations and a decrease in interpretation time. The specific aims of our proposed work are to (1) develop hardware as a proof-of-principle demonstration of photography integration with portable x-ray machines, and (2) conduct an observer study to determine if the presence of photographs can improve the detection rate of patient mislabeling without increasing the interpretation time. The performance of our preliminary prototype and preliminary evaluation with a small group of radiologists at Emory is encouraging. This experience, along with our collectively unique background in clinical radiology, hardware/software design, and clinical trials positions us uniquely to succeed in the proposed work. The results of our proposed work will form the basis for grant applications to 1) SBIR/STTR programs, for further development of the system architecture, and 2) PCORI, for clinical performance evaluation of the technique. We are also working with Emory University’s Office of Technology to submit a final patent application on our proposed technique.

Amount Requested: $25,000