force capabilities of the device and defining force requirements. DISCUSSION/SIGNIFICANCE OF IMPACT: Upon further development and testing, this device can be implemented into endovascular neurosurgery to improve occlusion rates of intracranial aneurysms and reduce patient risk during these operations. CONFLICT OF INTEREST DESCRIPTION: I am pursuing intellectual property on this invention. I was careful not to describe the invention in too much detail in my abstract submission for this reason. This research is my thesis work, and I placed on one year embargo on it before it is published to give us time to sort out IP. I would like to be considered for inclusion in Translational Science 2020 if I am able to get IP on this work before publishing, which I expect will be the case. I have every intention of obtaining IP before the conference in April 2020.

4524

Fighting Malaria, One Image at a Time: Using Computer Vision to Develop an Automated Vector Speciation Tool

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OBJECTIVES/GOALS: Rapid and accurate identification of primary malaria vector species from collected specimens is the most critical aspect of effective vector surveillance and control. This interdisciplinary team of engineers aims to automate identification using a deep learning computer vision algorithm. METHODS/STUDY POPULATION: The team spent August of 2019 observing and participating in control and surveillance activities in Zambia and Uganda. They conducted >65 interviews with key stakeholders across 9 malaria control and surveillance sites, ranging from field and community health workers, to malaria researchers and Ministry of Health employees. Stakeholder feedback validated the need for a more accurate and efficient method of vector identification in order to more effectively deploy targeted malaria interventions. The team set forth in designing and prototyping a portable, automated field tool that could speciate mosquito vectors to the complex level using artificial intelligence. RESULTS/ANTICIPATED RESULTS: The team's research demonstrated that accuracy, cost effectiveness, and ease of use would be critical to the successful adoption of the tool. Results of initial prototyping, usability studies, and stakeholder surveys were used to determine the tool's minimal user specifications: 1) the ability to distinguish between *Anopheles Gambiae* and *Anopheles Funestus*, the two principal malaria vectors in the countries visited, 2) achieving an identification accuracy of ≥90% to the complex level, and 3) accessibility to the speciation data 3-7 days following vector collection. Next steps include optimizing the tool to deploy a minimal viable product for testing in Kenya by the summer of 2020. DISCUSSION/SIGNIFICANCE OF IMPACT: The accurate, high-quality surveillance enabled by this device would allow malaria control programs to scale surveillance to remote regions where an entomologist may not be available, allowing malaria programs to deploy effective interventions, monitor results, and prevent disease.

4294

Patient Matching Errors and Associated Safety Events

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OBJECTIVES/GOALS: Errors in patient matching could result in serious adverse safety events. Unlike publicized mix-ups by healthcare providers these errors are insidious and with increased data sharing, this is a growing concern in healthcare. The following project will examine patient matching errors and quantify their association with safety. METHODS/STUDY POPULATION: EHR systems perform matching out-of-the-box with unknown quality. Using matching processes outside the EMR, the rate at which matching errors are present was quantified and the erroneous records were flagged providing both comparative measures and data necessary to evaluate patient safety. To understand the relationship between matching and safety we will establish a percent of voluntarily reported safety events in our institution where a matching error existed during an encounter. Any safety events occurring for a flagged patient will be reviewed to determine if matching errors contributed to the safety problem. Not all safety events are reported so we will perform full chart review of a filtered list of medical records that have a higher likelihood of safety events. RESULTS/ANTICIPATED RESULTS: We were able to quantify matching errors, and the preliminary matching error rate is approximately 1%, representing over 700 patients. The work is in progress and we are beginning to determine the association between safety events and incorrect matching. Together these results will provide an incentive to identify errors, make corrections, and develop methods to achieve these objectives. The number of matching errors impacts patient care as well as business operations and is likely to have a negative financial impact on institutions with high error rates regardless of its relationship to safety. DISCUSSION/SIGNIFICANCE OF IMPACT: Patient matching is bundled with EHR software and institutions have little control over error rates, yet bear the liability for resulting clinical error. Institutions need to be able to identify undetected matching errors and any associated safety events and this project will provide that solution.

4324

Phase 1 Sterile Product Formulation and Manufacturing at Academic Medical Centers: An Introduction for Translational Researchers

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OBJECTIVES/GOALS: To facilitate the development of innovative injection products by providing translational researchers with a regulatory and manufacturing road map for producing small batch sterile products for Phase 1 research use. To leverage recent AMC investments in facility improvements and pharmacy training in the areas of sterile product production, testing, and environmental controls, that can be used to support production of phase 1 clinical trial supplies METHODS/STUDY POPULATION: Searching and organizing relevant data and information from web portals and databases in the following: areas: FDA, EMA, USP regulations, regulatory

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