Venus: Vascular Locator

Cunha dos Santos, Marcia

Rosa Kelsch, Carolina

Peripheral intravenous access is an essential procedure to health treatment problems ranging from dehydration to infections and cancer. Errors in venipuncture may cause patient injury, psychological trauma and delay the treatment in up to 25 %. The current forms of venipuncture aid are limited and inaccessible to Brazilian hospitals. Given the importance of avoiding the problems mentioned above, and aiming to provide more effective health treatments, the current project developed VENUS, a vascular locator and viewer using a mobile platform as an innovative and economic alternative To see the veins, VENUS uses a camera adapted to capture infrared that can differentiate what is vein, and what it is not, even the ones that can't be seen with naked eyes. The image is processed and exhibited on a smartphone screen, providing health professionals a clear and accurate view. The structure of the prototype has a clip, thus being able to adapt to various situations, and its mold provides the nurse freedom to have both hands free for the procedure. Analysis of tests view of the veins of cancer patients has demonstrated that the device increased an average 119.7% visualization of the venous grid when compared to visibility without the device. The viewed veins were analyzed and compared with the anatomy of the venous grid from nursing bibliographies. This image analysis showed no noise interference or other biological components. VENUS will probably reduce equipment costs since components total cost corresponds to USD 430 versus commercial equipment purchase cost of USD 17.000. Therefore, we believe VENUS addresses technological, economic and social issues, meaning the improvement in the lives of more people.

Awards Won:

Fourth Award of $500