New Thermographic Imaging Promises Improved Care for Patients of 
Burn Center

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A unique camera is about to give physicians the power to predict more accurately how patients will heal at University of Utah Health’s Burn Center.

A thermographic camera, purchased with Imagine Perfect Care dollars, is 80 to 90 percent accurate in determining burn depth, studies show. Even expert burn physicians are accurate only 50 to 70 percent of the time.

Knowing the depth of a burn helps determine how it will heal. Without surgery, deep second degree and third degree burns heal abnormally with scarring that can increase loss of function at joints.

“The underlying reasons why patients have such a hard time in the hospital is because they don’t have the ability to predict their life,” said Giavonni Lewis, assistant professor of surgery at the Burn Center.

Burn Center staff began taking thermographic images of patients’ wounds in Fall 2017 and will analyze that data to determine best practices for the future. The goal is to examine accuracy rates on at least 100 patients — comparing camera data and doctor analysis. New protocols will be developed for clinical care by Summer 2018.

Summer is when the Burn Center is often busiest as a result of accidents involving bonfires, camping, and weed and trash burning. In addition, children are out of school and adults are doing more activities outside.

With the camera, staff can take a reading at admission and the next day to determine burn depth. The camera measures differences in temperature, which indicate blood flow. Warmer areas suggest the wound will heal whereas colder temperatures indicate a deeper injury.

“If I know it’s a second degree burn and will heal, I can teach patients how to manage their wounds,” Lewis said. “They can leave the hospital sooner and be managed as an outpatient.”
The camera helps decrease both patient and hospital costs and helps the patients psychologically prepare for what’s next.

If the burn is indeed deep second or third degree, then doctors can begin to discuss how to prepare for surgery and what to expect afterward.

Analyzing burns has not changed dramatically in the last few decades, Lewis said. But technology is offering new options. Now smart phones can be adapted to become thermographic cameras at relatively low cost.

As the clinical nurse coordinator at the center, Colby Carper knows how this will help a patient outside of Utah who has traveled far with their family to the burn center. In the future, the patient with a more superficial injury might be able to stay for only a few days versus a week of waiting.

“Having a defined timeline of what expectations are for that patient is really key to their wellbeing,” Carper said.

Now staff often have to present two scenarios to patients: a short stay with fast healing or the potential of surgery and a 7 to 14 day recovery in the hospital. The camera could help eliminate the additional stress of the unknown for someone who has already experienced trauma from the burn.

“From some of the preliminary photos we put into the software and evaluated ... I think it gave us more confidence that this could be a game changer for us.” he said.

By Julia Lyon