Long-Handled Skin Self-Inspection Camera
(VA Reference No. 10-164)

Unique device for patients at risk of developing pressure sores, foot sores, or other skin conditions

Technology
The Department of Veterans Affairs (VA) has developed a long-handled skin inspection device for patients at risk of developing pressure sores, foot sores, or other skin conditions. The long-handled skin self-inspection device includes a camera which is a high quality lightweight camera that plugs into a computer and has been adapted for patients to reach parts of the body which are normally difficult to see (such as buttocks, back, or bottom of foot). The device also includes a flexible rod and handle, which extends the normal reach of the camera. The images captured by the camera can be immediately displayed on the computer screen. The patient can view the images and send any images of potential concern to a healthcare provider to assess.

Opportunity
Patients with spinal cord injury and diabetes often develop pressure sores and foot sores, respectively, without knowing the sores are developing. There are an estimated 2.5 million patients, which are treated annually for pressure ulcers in United States acute care facilities alone. The treatment of this condition has become a costly challenge for clinicians and healthcare providers, with the cost to care for an advanced pressure ulcer estimated as high as $70,000 per case.

Of the over 25 million Americans with diabetes, 25 percent will develop foot problems related to the disease and the problems could be serious enough to warrant amputation. Diabetic foot care accounts for up to 20 percent of total healthcare resources available for diabetes with the economic cost of a diabetic foot ulcer estimated at between $7,000 and $10,000. Where healing is complicated and amputation required, this cost may increase to as much as $65,000 per person. In most cases, however, diabetic foot ulcers and amputations can be prevented with research estimating that between 49 percent and 85 percent of all amputations can be prevented.

Competitive Advantage
The screening system enables patients to effectively visualize the surfaces of the skin and make a determination regarding whether the patient needs to seek medical attention. The system provides a solution to patients that have loss of skin sensation, limited mobility, and decreased vision, which impairs their ability to monitor the condition of the skin. Unlike current screening methods, the self-inspection system has the ability to record high-resolution images or videos. As abnormalities become apparent in the images, the patients can contact their healthcare provider and obtain appropriate clinical care. Frequent preventative checks using the system could improve the rate of early detection of tissue breakdown; potentially improving treatment outcomes and reducing the occurrence of severe interventions, such as foot amputation in diabetes patients.

Status
The Department of Veterans Affairs is looking for a partner for further development and commercialization of this technology through a license and the VA inventors are available to collaborate with interested companies through a Cooperative Research and Development Agreement (CRADA).

Technology
Flexible, long-handled, self-inspection camera for viewing skin conditions

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Key Features
- Self-inspection camera allows visualization of skin conditions
- Captures high resolution images or videos
- Displays images on computer screen for easy visualization
- Ability to send images electronically to healthcare provider

Stage of Development
Reduced to practice with prototype system developed

Keywords
Skin inspection system
Pressure and foot sores
Diabetes
Spinal cord injury
Telemedicine

Patent Status
Patent application

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