Pressure injuries are a costly problem

Background

Pressure injuries (PI) are lesions caused by unrelieved pressure that results in damage to the underlying tissue. Generally, these are the result of soft tissue compression between a bony prominence and an external surface for a prolonged period. The consequences of pressure-induced skin injury range from non-blanchable erythema of intact skin to deep ulcers extending to the bone. The ulcer imposes a significant burden not only on the patient, but the entire health care system. An estimated 2.5 million pressure ulcers are treated each year in US acute care facilities alone.

In 1991, a market study was performed to estimate the treatment costs and the costs of hospitals stays for patients who developed ulcers during hospitalization. These costs were estimated to be as much as $6 billion per year! In elderly populations and in those who are institutionalized, pressure injuries are one of the costliest diseases to treat.

Pressure injuries add an estimated burden of over $1 billion of expenditures and an additional 2.2 million Medicare hospital days to the United States healthcare system. The cost of treatment is $2,000-$40,000 per pressure ulcer, depending on the stage of development.

For reconstructive surgery, costs are estimated at $25,000 per patient. These costs alone, without the cost of human suffering, demonstrate the importance of preventing pressure injuries and of cost-effective treatment practices.
Pressure injuries early damages in intact skin, are difficult to detect, particularly in individuals with darker skin, since visible skin color changes are masked by the skin's pigmentation.

IR-MED patented technology platform for early detection of pressure injuries formation

IR -MED's device, the PressuSafe scanner is a hand-held device performing a reflectance spectroscopy scan that can detect early subdermal physiological changes together with other bio-signals typical to early formation of pressure injuries thus, preventing the appearance of life risking pressure injuries. A specially designed, optic probe is placed for a few seconds on defined bony prominence points of the human body. Regardless of skin tone, by measuring differences of subdermal fluid content and bio signals, the PressureSafe monitor can differentiate between stage 1 pressure injuries and DTI (deep tissue injuries) at sites of higher risk of formation.

By taking a short optical sampling and analyzing the data with IR-MED machine learning algorythm, PressureSafe enables the following benefits:

- Accurate pressure injuries documentation of each patient is electronically generated
- An accurate real time dagnosis is avalable for care givers
- Treatment monitoring allows cost effectivieness in pressure injuries treatment for care givers.

IR-MED is currently running a clinical trial at Beit Leweinstein Rehabilitation center and at Meir Kfar Saba medical center to prove its high efficacy and safety. The clinical trial is divided into 2 phases.

The first phase includes machine learning session, where, IR-MED algorythem is tought to identify DTIs (Deep Tissue Injuries) and stage 1 pressure injuries.

In the second phase of the clinical trial the algorythm identifyies type of pressure injury introduced on a blind basis.

The PressureSafe monitor will be composed of a hand held optic probe for clinical testing and a tablet for data collection. The probe itself will contain all optical components requried for accurate diagnosis and will have a disposable cap.

For further information, we will be pleased to meet you!

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