A review of, and template for, the development and validation of Electronic Wound Measurement Systems

Abstract

Inaccuracy is often referred to as bias and precision is a measure of variability. Many wound measurement devices, however, have been found to be less concerning for institutions and clinicians wanting to see an improvement over traditional manual documentation, as any electronic technique is likely to result in improvement, but it is concerning for those wanting to see an improvement over traditional manual documentation. Yet, the quality of the research underpinning the effectiveness of these systems is highly methodological shortcomings and how to develop a sequential process for the statistical validation of Electronic Wound Measurement (EWM) devices.

Introduction

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Background

Area related to the primary measure most commonly used in the clinical setting to gauge healing progress of wounds is wound area. Wound area is an important measure in the assessment of the amount and rate of healing. It is a gross indicator of the amount of tissue destruction and regeneration that is occurring in a wound.

The various algorithms, imaging technologies and measurement technologies used in the devices differ and the required accuracy and precision of the devices varies widely across different types of wounds, based on the length and width of wounds. Moreover, EWM devices have been found to have less accuracy and precision in the measurement of small wounds, and the ICC = 1.0, which is measured as the average difference between measured and the actual areas. These references provide a summary of the magnitude of bias and precision of the EWM devices to varying degrees, and examples of these variation sources.

Electronic Wound Measurement Systems

Electronic Wound Measurement (EWM) devices were developed to measure wound area, length, and width. The precision and accuracy of these devices have been found to be highly variable and the EWM devices have been found to lack both accuracy and precision to varying degrees, and examples of these variation sources.

Statistical Considerations

The reliability of the measurement device, so that its results are a constant measure, is often referred to as a constant measure. The term reliability can be defined as the consistency or reproducibility of an instrument or measurement. This consistency or reproducibility can be measured by the extent to which the results of repeated measurements converge on a single value.

The reliability of the measurement device must be the same result and it is a consistent measure.

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